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RESPIRATORY DISEASES OF PIGS

V.—Some Clinical and Epidemiological Aspects of Virus Pneumonia of Pigs

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INTRODUCTION

At the present time pneumonia is the most common pathological condition affecting the pig. Apart from those cases due to tuberculosis, the great majority appear to belong to one clinical entity. The cause of this disease has been widely believed to be swine influenza following the work of Shope (1931) in America and that of Blakemore and Gledhill (1941) in this country. Gulrajani and Beveridge (1951), however, in an earlier paper in this series, reported that they were unable to isolate the virus of swine influenza from natural cases of pneumonia but that they found instead another filterable agent. With this agent they reproduced a chronic low-grade infection which contrasted with the acute disease caused by the virus of swine influenza both experimentally and in the field. Further laboratory and field studies by the writer have entirely supported their findings and no field cases of swine influenza have yet been found. We now have confidence in the view that the commonest cause of pneumonia in pigs at present is the agent first demonstrated by these workers.

Gulrajani and Beveridge (1951) gave the disease the provisional non-committal title of "Infectious Pneumonia of Pigs." Now that we are more certain that the causal agent is a virus we have adopted the name "Virus Pneumonia of Pigs" (V.P.P.) for the condition.

This paper summarises clinical and epidemiological observations made on the disease during 1950 and 1951.

MATERIALS AND METHODS

Fourteen field outbreaks of V.P.P. have been investigated by clinical and pathological examinations and virus isolation has been attempted in nine, each time successfully.

In addition, a small survey of 22 herds selected at random in East Anglia has been carried out. The presence or absence of pneumonia as determined by clinical examination has been confirmed by the *post-mortem* examination of pigs dying naturally or by examination of lungs of bacon pigs at slaughter. The latter has been made possible by the co-operation of the Ministry of Food and Mr. D. J. Anthony, M.R.C.V.S., who has kindly examined most of the lungs. A number of pigs has also been sent to a local bacon factory for our examination. In addition, 2,000 other lungs have been examined for evidence of past or present infection.

Virus isolation has been carried out by injecting into the lumen of the trachea of susceptible pigs either bacteria-free filtrates of lung suspensions, or unfiltered suspensions to which antibiotics have been added.

Bacteriological examinations have been made by primary culture on horse-blood-agar plates and on Fildes' solid medium for haemophilic organisms. Subsequent identification has been based on morphological, cultural and mouse-pathogenicity tests.

A number of attempts has been made to detect pleuropneumonia-like organisms in smears of lung tissue and by culture, but so far none has been detected.

Faeces samples were examined for the presence of nematode eggs by a slightly modified McMaster technique.

INCIDENCE

The lungs of 11·1 per cent. of 699,258 pigs slaughtered at a large bacon factory in the Midlands during the period 1946-51 were condemned completely as a result of extensive pneumonia of non-tuberculous origin. In addition, small areas of pneumonia were trimmed away from many more lungs. According to Anthony (1952), if these cases were included the percentage of lungs affected would be about 50.

To obtain more information on the total percentage of lungs showing lesions, the lungs from 1,000 pigs selected at random were examined at this factory by Mr. Anthony, at our request. The results are shown in Table I.

TABLE I

THE INCIDENCE OF LESIONS IN THE LUNGS OF 1,000 PIGS

Percentage of lungs showing lesions	Four or more lobes showing consolidation	Less than four lobes showing consolidation	Lungs with fibrotic lesions only
61·3	18·8%	24·7%	17·8%

Another series of 1,000 lungs was examined at a bacon factory near Cambridge. Only lungs showing active lesions typical of V.P.P. were recorded, areas of fibrosis being disregarded; 42 per cent. of the lungs examined showed lesions of active pneumonia. This figure is remarkably close to that of Anthony.

Although clinically there may appear to be more outbreaks of pneumonia in winter, the percentage of pigs showing pneumonia at slaughter remains relatively constant throughout the year.

There has been a considerable increase in the relative incidence of pneumonia in pigs since the war, apparently associated with the rapid expansion of the pig population of the country. The higher concentration of pigs presumably facilitates the transfer of infection from one pig to another.

This post-war increase in incidence of pneumonia is illustrated in Fig. 1, which is based on Anthony's figures for the number of pigs killed and the number of lungs condemned outright each year at Brierley Hill, and on the Ministry of Agriculture's annual March statistics for the total number of pigs in England and Wales.

The number of herds included in the survey in which the disease was found to be present is shown in Table II.

One of the affected commercial herds had a history suggestive of infection but clinically no respiratory abnormality could be detected. Lungs of pigs from this herd, however, showed lesions of pneumonia at slaughter.

* This work was done while the holder of a Research Training Scholarship of the Animal Health Trust.

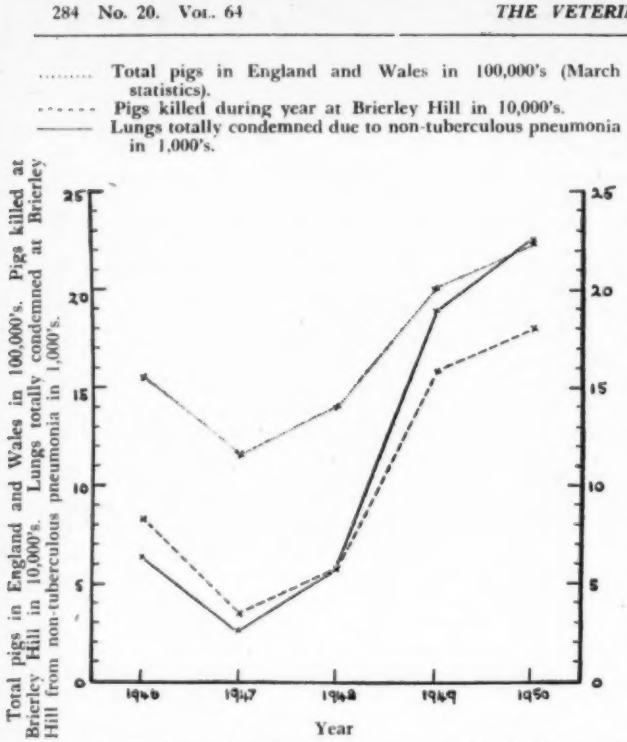
Total pigs in England and Wales in 100,000's (March statistics).
Pigs killed during year at Brierley Hill in 10,000's.
Lungs totally condemned due to non-tuberculous pneumonia in 1,000's.
Total pigs in England and Wales in 100,000's. Pigs killed at Brierley Hill in 10,000's. Lungs totally condemned at Brierley Hill from non-tuberculous pneumonia in 1,000's.
25
20
15
10
5
0
1946
1947
1948
1949
1950
Year

FIG. 1.—Graph to illustrate the increase in the incidence of pneumonia associated with the increase in the pig population of the country.

TABLE II

Designation of herd	Number of herds examined	Number infected
Pedigree	12	8
Commercial	10	8
Total	22	16

From the reports of visiting pathologists it appears that this, or a very similar form of chronic pneumonia, is widespread in France, Holland, Norway, Finland, Poland, Australia, South America, Canada and the United States. In connection with its possible presence in the U.S.A. the observation of Shope himself (1931) is of interest : " While in 1928 the epizootic disease (*swine influenza*) was so plentiful in Eastern Iowa that material from typical cases was easily obtained, in 1929 much difficulty was encountered. Many cases were then seen in which a loose diagnosis of ' hog 'flu ' had been made. These animals, as a rule, were found to be suffering from a respiratory affection quite often simulating the true epizootic swine influenza in some respects but differing markedly in others. The true nature of the condition could usually be recognised by the absence of prostration on the part of the affected animals, the greater chronicity of the disease, and the failure of more than a small proportion of the herd to become affected."

AETIOLOGY

Filtration experiments suggest that the infective agent of V.P.P. is a large virus, probably not less than 200 mμ in diameter. It is susceptible to aureomycin to some degree, but is insusceptible to penicillin, streptomycin and probably also to the sulpha drugs. The virus will survive for at least 24 hours in buffer solution at room temperature.

The agent persists for long periods of time in pneumonic lung and there is little tendency for the lesion to undergo resolution. We have recovered the virus, by inoculation of susceptible pigs, from one pig known to have been infected 66 weeks previously and from a group of pigs infected 21 weeks previously. Another pig showed active - looking pneumonia at autopsy 56 weeks after known infection. In this case virus isolation was not attempted. All these pigs had coughed for a few weeks but then had recovered clinically and apart from slight retardation of growth, appeared normal. They were kept in isolation from the time they first showed signs of infection until they were killed for examination. These experimental findings support field experience which suggests that infection persists in the pig from one generation to the next, and that once the disease is introduced into a herd it tends to remain indefinitely in an endemic form.

Although the virus itself is capable of setting up lesions, in most natural cases secondary bacteria are also present. Pasteurellae are most frequently isolated but streptococci, *Haemophilus bronchisepticus* and Friedlander's bacillus have been found. We have been unable to set up pneumonia experimentally with cultures of these organisms. We have not yet isolated *Haemophilus influenzae suis* from pneumonic lungs.

THE SPREAD OF INFECTION

We have no evidence at present to suggest that the spread of infection from one pig to another is by any means other than by airborne infection, and we have produced the disease by exposure of susceptible pigs to infective mists. The introduction of infection into a fresh herd usually can be traced to the purchase of coughing store pigs or of symptomless adult carriers in the form of new breeding stock. Piglets frequently become infected from their mothers. On other occasions infection occurs when pigs from several litters are mixed at weaning.

CLINICAL FEATURES

Experimentally, the incubation period varies from 5 to 12 days with occasional longer periods. In the majority of experimental cases it is seven to eight days. Fig. 2 is a histogram constructed from the length of the incubation periods of 45 experimental cases.

However, the dose of virus given to most of these animals was far greater than could ever occur in the field, and it has been noticed that when a small dose is given there is a tendency for the incubation period to become longer. In the field, evidence from case to case contact suggests that the incubation period is in the region of 10 to 16 days.

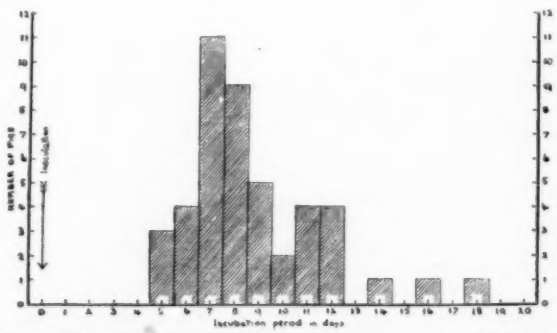

FIG. 2.—Histogram to show time elapsing between inoculation and the onset of symptoms in 45 experimental pigs.

The disease may take an acute or, more frequently, a chronic form. When infection is first introduced into a fully susceptible herd, for example by the purchase of a carrier boar, the effect may be quite dramatic. Pigs of all ages contract the disease, morbidity is usually 100 per cent., and mortality may be high. In one outbreak mortality was highest among the sows with litters and we have seen baby pigs dying from the disease as young as 10 days of age. These deaths in a fresh outbreak are due to virus infection alone without the participation of secondary bacteria and the victims may die quite suddenly in respiratory distress. Frequently there is little rise in temperature. In the surviving pigs the disease becomes chronic.

Since there are comparatively few herds which have not had contact with this disease most cases of pneumonia are of the chronic variety. Morbidity is high but generally mortality is low. Typically, piglets begin to show symptoms at 3 to 10 weeks of age. There is frequently a transient diarrhoea which is followed within a day or two by the development of a dry, non-productive cough. In suckling pigs there may be a short period of abortive sneezing but we have not seen this in weaned pigs. The cough is characteristic and is the most prominent symptom. It is most marked when pigs come out to feed in the morning but can usually be elicited by a period of vigorous exercise. This cough may disappear after some weeks or may persist almost indefinitely. The coat lacks the normal "bloom" and the skin has a grey tinge. Disturbance of respiratory movements is only readily seen when the area of lung involvement is extensive.

Affected pigs do not thrive as well as normal pigs although their appetites usually are maintained. In some cases the loss of condition may be very marked and severe stunting may result. One of the worst field cases we have seen weighed 17 lb. at 155 days of age. More often there is little change in conformation and these cases are frequently unrecognised. They often appear to be progressing reasonably satisfactorily unless they are compared with pigs which have not been exposed to the disease. Figs. 3 and 4 show two pigs from the same litter, one of which, EA3, was infected with virus alone while the other, EA4, was left normal. When the photographs were taken 65 days after the experiment began, the affected pig weighed 38 lb. less than its litter mate. At slaughter the following day pig EA3 showed pneumonia, while the lungs of EA4 were normal.

Fig. 6 shows the growth curves of these two pigs.

The pig in Fig. 5 was a field case of approximately the

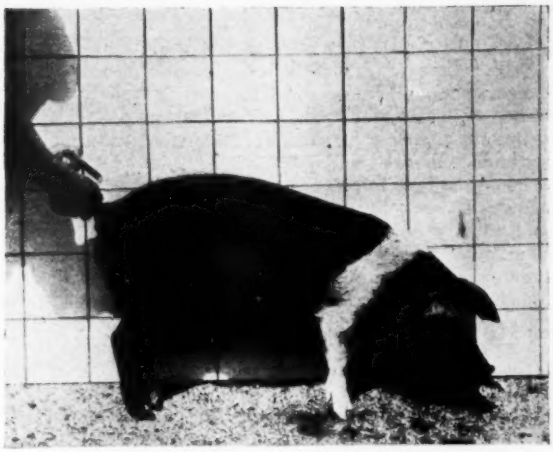

Fig. 4.—Pig EA3 experimentally infected with virus pneumonia. Age 120 days. Weight 66 lb.

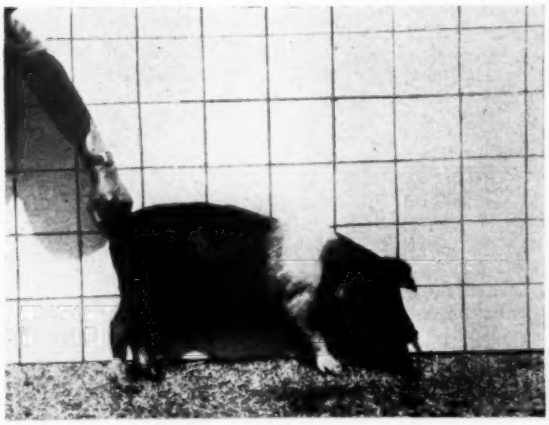

Fig. 5.—A field case infected with the virus and a secondary Pasteurellae. Age 131 days. Weight 38 lb.

Fig. 3.—Pig EA4, a normal litter mate of EA3. Age 120 days. Weight 104 lb.

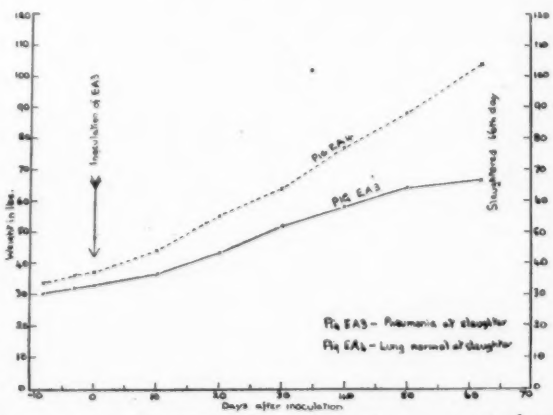

Fig. 6.—The growth curves of two litter mates, one normal and the other experimentally infected with the virus.

same age in which a secondary Pasteurella infection was superimposed upon the virus infection.

Since all the pigs in a litter do not suffer equally severely from the disease, frequently there is considerable variation in size between them. We have been struck by the even nature of litters obtained in our own and other known pneumonia-free herds, compared with the uneven litters of herds affected with the disease.

Once the pig is infected there seems to be set up a delicate balance between the virus and secondary bacteria on one hand and the host on the other. Under adverse conditions the balance moves in favour of the parasite and the effect of the disease on the host is more severe. If, however, the animals are kept warm, have dry, draught-proof sleeping quarters and are adequately fed, the effect of the disease is mitigated considerably. One gets the impression that the disease is more severe when piglets are suffering from anaemia.

A number of pigs previously infected as piglets develop an acute pneumonia at 20 to 26 weeks of age. These animals become prostrate, show the condition of "thumps" and frequently have a rust-coloured nasal discharge. Temperature is usually in excess of 105° F. This appears to be a breakdown of earlier lesions and is associated with marked proliferation of secondary Pasteurellae.

Post-mortem Findings

In the vast majority of cases the lesions are confined to the ventral portions of the lungs, particularly in the cardiac and apical lobes. The diaphragmatic lobes are far less frequently affected. Table III shows the lobes involved in 80 field and 80 experimental cases.

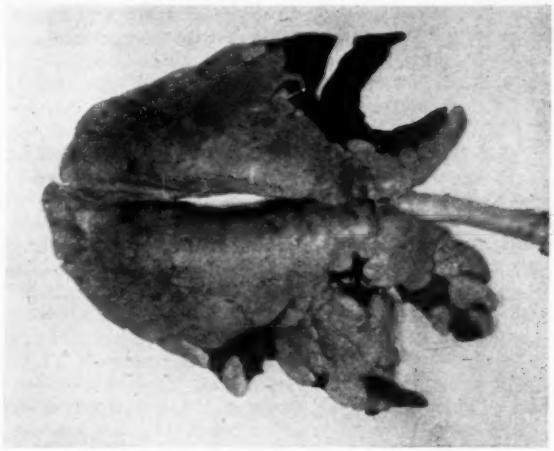

Fig. 7.—The lesions in a chronic case of virus pneumonia.

We have observed on several occasions that suckling pigs, although showing all the signs of infection, including retardation of growth, may show little, if any, macroscopic pneumonia if killed for diagnostic purposes. The pulmonary lymph nodes are, however, enlarged and we have had no difficulty in recovering the virus from such cases.

The Establishment of a Pneumonia-free Herd.—In order to provide suitable animals for experimental work, it has been necessary to build up a herd of pigs free from this disease. In the absence of a serological test, we have been forced to rely entirely upon clinical examination and we regard it as a point of some significance that we have thus been able to establish this herd, which has remained free from pneumonia and coughing since its inception in the early part of 1951. It does show that it is possible, at least in some instances, to differentiate between affected and unaffected herds by clinical examination only.

After careful questioning of the owner and the pigman, separately, regarding any history of coughing, each pig in the herd in question was given a cursory examination, but closer attention was paid to the weaners which were subjected to vigorous exercise and then observed for several minutes while resting, to see if they would cough. If any pig in the herd coughed or showed any other symptoms of pneumonia, no pigs were purchased there. Ultimately, three breeders of Essex pigs were found with herds which satisfied these criteria and in-pig gilts were obtained from them. Later, a Large White boar was purchased.

Our experimental herd is kept under open-air conditions but in strict isolation and apart from a few piglets being over-laid by the sow, we have had no losses between birth and the transfer of the young pigs to the experimental pens at 10 to 14 weeks of age. To date, 220 pigs have been reared to this age.

Table III
Distribution of the Lesions in 80 Field and 80 Experimental Cases

	Number of cases	Right apical lobe	Left apical lobe	Right cardiac lobe	Left cardiac lobe	Right diaphragmatic lobe	Left diaphragmatic lobe	Intermediate lobe	Total lobes involved
Field cases	80	46	42	46	43	20	24	23	244
Experimental cases ...	80	67	54	72	63	36	38	56	386
	160	113	96	118	106	56	62	79	630

The lesions are usually plum coloured but sometimes they are greyish and have the appearance of lymphoid tissue. The pneumonic areas are clearly demarcated from the normal lung tissue and are level with or below it. Fig. 7 is a photograph of the lungs from a typical chronic case of the disease. In long-standing lesions there may be variable degrees of fibrosis resulting in distortion of the affected parts, but often areas of active pneumonia can be seen adjacent to the bands of fibrous tissue. The tendency for resolution is not marked but resolution does occur in a proportion of cases. Sometimes pleurisy and pericarditis are found.

The bronchial and mediastinal lymph nodes are enlarged and oedematous.

In acute cases dying from virus infection alone there may be intense congestion and oedema of the lungs, with frothy exudate in the trachea.

Pigs dying at 20 to 26 weeks of age in herds in which the disease has been present for some time frequently have in the lungs yellow necrotic areas which teem with bipolar organisms. Pleurisy is almost invariably present and pericarditis commonly occurs in these cases. Sometimes peritonitis is seen in association with pleurisy.

Weaning weights have been high, over 40 lb. at eight weeks (sometimes over 50 lb.), and litters have been consistently "even," there being but little variation in size between individual pigs of the litter.

Differential Diagnosis

Ascarid Infection.—There is a very widespread belief in East Anglia that pigs which cough and are unthrifty are infected with *Ascaris lumbricoides* and vast amounts of anthelmintics are used annually in treatment.

We noticed, however, early in our work, that the incidence of *Ascaris lumbricoides* in pigs at a local bacon factory was low and bore no relation to the presence or absence of pneumonia. We therefore examined composite samples of faeces from 23 herds for nematode eggs with the results as shown in Table IV.

Table IV

	Number of herds examined	Number of composite faeces samples taken	Ascaris eggs present		Oesophagostomum eggs present	
			Herds	Samples	Herds	Samples
Pneumonia-free herds	5	36	0	0	5	32
Herds with pneumonia	18	90	3	5	18	49
Totals	23	126	3	5	23	81

Ascaris eggs were present in only three herds and then only in low counts. In almost all the herds, pigs were wormed with sodium fluoride or oil of chenopodium at weaning or later, but only in the three herds in which we found ascaris eggs did this result in worms being passed out in the faeces. Clinical and epidemiological examination suggested that V.P.P. was present in the three herds. Pigs from two of them were examined at slaughter and lesions identical with those of V.P.P. were found, there being no evidence of pneumonia due to parasites.

As a result of these observations, and others, we have formed the opinion that the great majority of cases diagnosed in the field as "ascaris pneumonia" are in fact due to V.P.P. and that the latter condition is by far the commonest cause of coughing in pigs. We propose to investigate further this aspect of the problem.

An interesting incidental feature in this series of examinations of faeces samples was the finding of evidence of Oesophagostomum infection in all the herds examined and in pigs of all ages. Some of the counts were remarkably high but the pigs appeared to be suffering no ill effects from their parasitic burden.

Experimentally, Dr. Lapage was unable to demonstrate any weight loss in pigs infected successfully by mouth with Oesophagostomum larvae.

Dry Feeding.—It is still not uncommon for farmers to attribute coughing and pneumonia in pigs to dry feeding. Innes (1936) has disproved this theory on histopathological grounds. Both clinically and pathologically, V.P.P. differs markedly from pneumoconiosis as described in man, and from the few cases described in dogs. Furthermore, our pneumonia-free herd is dry-fed and coughing is unknown among these pigs.

Swine Influenza.—American swine influenza as described by Dreher (1922), Dorset, McBryde and Niles (1922), McBryde, Niles and Moskey (1928), Shope (1931), and Schofield (1951) is an acute condition of short duration and is essentially a disease of autumn and winter. Onset is sudden and occurs simultaneously amongst the majority of pigs in the herd. The incubation period is 24 to 48 hours, the disease lasts four to five days and recovery is as sudden as onset. Sick hogs are prostrate and show high temperature and anorexia. Breathing is dyspnoeic and "thumps" is a prominent symptom.

Autopsy of fatal cases shows lobular pneumonia, giving the lung a mottled appearance. The main areas of collapse, however, are in the anterio-inferior parts of the lungs but the remaining lung tissue is usually congested and markedly oedematous. From the majority of cases *Haemophilus influenzae suis* can be recovered.

In contradistinction to the acute American disease, Hjarre, Bakos and Nordberg (1949) in Sweden, and Blakemore and Gledhill (1941) in this country, report chronic cases of influenza and the persistence of the virus in the lungs for fairly long periods of time. In those reported by the British workers, however, the pigs were affected with lungworms. Gulrajani (1951), working with one of the strains of swine influenza (C1) isolated by Blakemore and Gledhill and subsequently maintained by passage through mice, was unable to recover the virus in pigs killed 10 days after inoculation. The disease he set up resembled Shope's experimental disease.

In the field the term "swine influenza" has been loosely used but we consider that the term "influenza" should be restricted to infection with a member of the influenza group of viruses. It seems probable that the disease we call "Virus Pneumonia of Pigs" has, in the past, been frequently confused with swine influenza.

We have been unable, as were Gulrajani and Beveridge (1951), to find any cases of "swine influenza" in the field and are of the opinion that swine influenza is uncommon at the present time.

Ferkelgrippe or Piglet Influenza.—This disease described by Kobe (1933) in Germany, and Lamont (1938) in Ireland, has some clinical, epidemiological and pathological features in common with V.P.P. There are, however, some discrepancies and a careful comparison is necessary before the relationship between the two conditions can be determined. So far, we have been unable to obtain specimens of ferkelgrippe for investigation.

Infectious Pneumonia.—Pullar (1948 and 1949) has described under this name a widespread pneumonia of pigs in Australia of unknown aetiology but distinct from swine influenza. Clinically, this disease appears very similar to V.P.P. and the two conditions may be identical.

Discussion

Economic Importance.—Perhaps the most important feature of this disease is the retardation of growth, which frequently is unrecognised.

We have insufficient data, at present, to give a reliable estimate of the average difference between infected and non-infected pigs but we feel that 10 lb. difference at 200 lb. weight would be a conservative guess. Calculating on that figure and assuming that 50 per cent. of pigs slaughtered are affected, this gives an economic loss of 2½ per cent. of the annual pig production.

In 1951, pigs to the value of £79,000,000 (provisional figure) were slaughtered for the Ministry of Food, so the loss would be $£79 \times \frac{5}{200} M = £1{\cdot}97M$.

To this must be added the value of pigs which die from the disease, and this would probably swell the total to over the £2,000,000 mark.

Since this disease is probably present in all pig-raising areas, the world loss from this disease must be many times this figure.

Control.—Our present research is directed towards developing some methods of control. However, the causal agent has proved to be a difficult agent to work with since in several respects it does not behave as most viruses do, and therefore progress has been slow.

At present the only suggestions we can offer towards controlling the disease are :—

(1) It is possible, though difficult, to obtain "clean" breeding stock by careful clinical examination of the parent herd as a whole. Clinical examination of the individual pig is quite insufficient. As a further safeguard each gilt should be kept in isolation until she has farrowed and has weaned her first litter.

(2) The effects of the disease may be minimised by keeping the affected pigs in a warm, dry environment free from draughts. Secondary bacteria may be combated by the use of sulphonamides, streptomycin and, to a lesser extent, penicillin. When aureomycin becomes generally available in a suitable form and is less expensive, it is likely to be of value in treatment, since in addition to combating the secondary bacteria it has some action on the virus itself.

Summary

The term "Virus Pneumonia of Pigs" (V.P.P.) is suggested for the disease which was described by Gulrajani and Beveridge (1951) and called by them provisionally "Infectious Pneumonia of Pigs."

About 50 per cent. of bacon pigs show pneumonia at slaughter. The percentage affected has increased considerably since the end of the war. Twenty-two herds, selected at random, have been examined and 16 were found to be affected with the disease.

The causal virus is a large one and persists for a long time in pneumonic lesions. It can cause pneumonia by itself but most field cases are associated with secondary bacterial infection, Pasteurellae being the most commonly found.

In the field the disease occasionally takes an acute form but usually is chronic. The most prominent symptom is a cough ; the growth rate of affected pigs is often retarded and sometimes these pigs later develop acute pneumonia associated with secondary bacteria.

The lesions are usually confined to the anterio-inferior portions of the lungs ; are generally plum-coloured and are clearly demarcated from the normal lung tissue.

Acknowledgments.—I am grateful to Professor Beveridge for his constant encouragement and advice at all stages of this work.

I am indebted to Mr. D. J. Anthony, M.R.C.V.S., who has kindly examined and furnished reports upon many hundreds of lungs and has given me permission to publish statistics collected by him over a number of years.

Thanks are due also to Dr. A. Calder and Mr. C. F. Venner, of the Ministry of Food, numerous veterinary surgeons, officials and farmers and to the manager and staff of the Hertfordshire and Bedfordshire Co-Operative Bacon Factory, without whose co-operation this work would not have been possible, and to Mr. D. W. Muncey, who carried out the routine egg counts.

My thanks are also extended to Mr. P. T. Edwards for technical assistance and to Messrs. C. and J. Gawthorp for their care of the experimental pigs.

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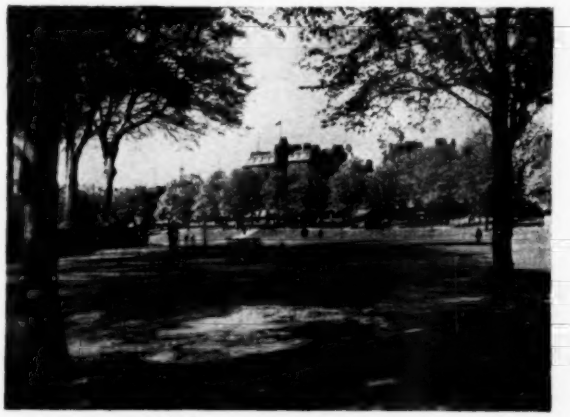
HARROGATE AND ITS ENVIRONS

ATTRACTIONS OF THIS YEAR'S B.V.A. CONFERENCE CENTRE

[Contributed]

Harrogate enjoys, and thrives upon, the reputation of being possibly the most sought-after conference centre in Great Britain, as unquestionably it is our most centrally situated health resort, for this attractive town stands midway between London and Edinburgh and midway between East and West Coasts. It has through railway services North and South and East and West and is on a main East—West road. Only a few miles away runs the Great North Road.

Standing amid the tree-clad uplands and Yorkshire moors and dales, Harrogate is one of the most picturesque places imaginable, while the health it affords is proverbial: the air has a moorland tang and a winy freshness. There is a sense of spaciousness in the streets and in spring and summer flowers are everywhere.



The West Park Stray.

Harrogate stays clean and wholesome because there is a minimum, indeed an absence, of smoky industry; and so the town itself is bright and clean. There are few, if any, places of similar size where in the season the drumming of the snipe and the haunting call of the curlew can be heard from its centre.

Outstanding features of Harrogate are its beautiful Valley Gardens, its lovely green, expansive "stray," the magnificent modern hotels, hydros and boarding houses and the smart, fashionable shops.

There are ample facilities in the town itself for all kinds of sports and games, for golf, tennis, squash, bowls, etc.,

while The Opera House and the fine cinemas provide an abundance of high-class entertainment and diversion.

The Royal Hall (Meeting Place of Congress).

The lure of Harrogate is not confined to the town itself. To many people one of its main attractions is the fact that it is the centre of one of the most interesting and most charming parts of England. Within easy distance are noted beauty spots and places of considerable historic significance: York, with its famous minster and medieval streets and walls; Ripon, that delightful cathedral city on the banks of the River Ure; lovely old-world Richmond. It is a land, too, of ancient abbeys—Fountains, big enough to make the Americans gasp, is only nine miles away and Rievaulx, Jervaulx, Byland and Bolton are easily reached. Old battlefields abound and no less interesting sights are the Roman remains at Ilkley, the weird potholes at Greenhow and the mysterious caves at Kettlewell, while many will wish to visit Haworth Moors, home of the Brontës.

Only three miles from Harrogate is Knaresborough, the old-world cattle market town, of Mother Shipton fame, where happy hours can be spent boating on the River Nidd.

One of the famous Yorkshire dales lies on the very outskirts of the town and there are more, many more, within the well-organised accessibility of coach and car.

To those whose interests are in field sports there is in season shooting, fishing, hunting, beagling and racing—all most easily accessible.

Sufficient has been said of Harrogate as a congress town to whet the appetites of our visitors. Rest assured there is a very hearty welcome, an assurance of mental and bodily sustenance with relaxations and entertainments second to none.

Montpellier Gardens, Harrogate.

CLINICAL COMMUNICATION

INITIAL OBSERVATIONS ON IODINE DEFICIENCY IN CATTLE IN ANTIGUA, B.W.I.

L. R. HUTSON,
Chief Veterinary Officer, Leeward Islands

The purpose of this report is to record initial observations on iodine deficiency in cattle as manifested by simple goitre in new-born calves in Antigua, B.W.I.

Iodine deficiency in man and livestock is known to occur in many parts of the world and some workers have observed that goitre has been reported in livestock in most of the areas where it is endemic or sporadic in the human population. With regard to the incidence of this condition in the human population in Antigua, the medical authorities state that practically all cases of thyroid dysfunction observed over many years are represented by hyperthyroidism rather than hypothyroidism; only one case of simple goitre was observed during the same period. One general practitioner reports very successful results in the use of iodine therapy for the improvement of the milk flow in nursing mothers.

Recorded information on the incidence of iodine deficiency amongst livestock in the British Caribbean is lacking and enquiries on this subject were addressed to veterinary officers in Jamaica, Trinidad, Barbados and British Guiana. In all cases a negative reply was received. However, a prominent livestock grower in St. Lucia, B.W.I., reports that he has observed a goitrous condition both in calves and sheep.

The following are reports on two cases of simple goitre in new-born calves at the Central Experiment Station, Antigua.

(1) *Subject.*—Grade Red Poll heifer calf, born 21.9.51; both dam and sire were born and raised at the same station. At birth, it was noticed that there was a marked swelling in the thyroid area. There was no sign of weakness, inability to rise or feed. A slight jugular pulse was evident.

Diagnosis.—Goitre. To confirm this diagnosis, the calf was slaughtered four days after birth and the thyroid gland removed. This was found to be considerably enlarged and very soft on handling. No other abnormalities were observed.

(2) *Subject.*—Grade Red Poll heifer calf, born 5.10.51. This calf was one of twin heifers (not identical). Sire, as above; dam born and raised at the station. As in the previous case, the enlargement of the thyroid gland was observed at birth; no signs of weakness or inability to rise or feed. The other twin showed no such swelling. Figs. 1 and 2 illustrate the condition.

Diagnosis.—As above. The calf was slaughtered on the 17th day after birth and the thyroid, which weighed approximately 337 grammes, was removed. No other abnormalities were observed.

Both of these thyroids were forwarded to Mr. S. L. Hignett, B.Sc., M.R.C.V.S., Wellcome Veterinary Research Station, for histopathological study. Mr. Hignett reports as follows:—

Thyroid No. 1. On histological examination there was evidence of gross thyroid hyperplasia. The epithelial cells lining the acini were markedly columnar and folds of epithelium projected into the lumina of the acini. The histological changes are those which one associates with an iodine deficiency. See Figs. 3 and 4.

Thyroid No. 2. The histological picture was similar to that of the other thyroid.

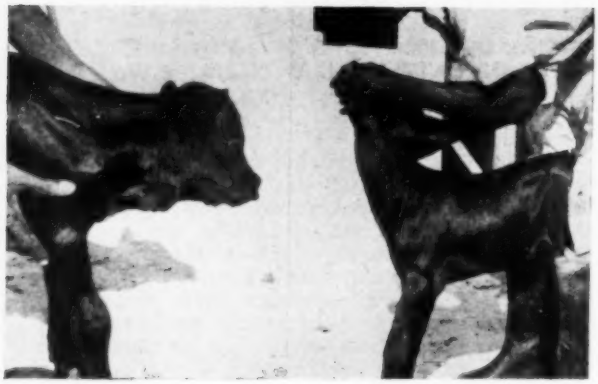


Fig. 1. Fig. 2.

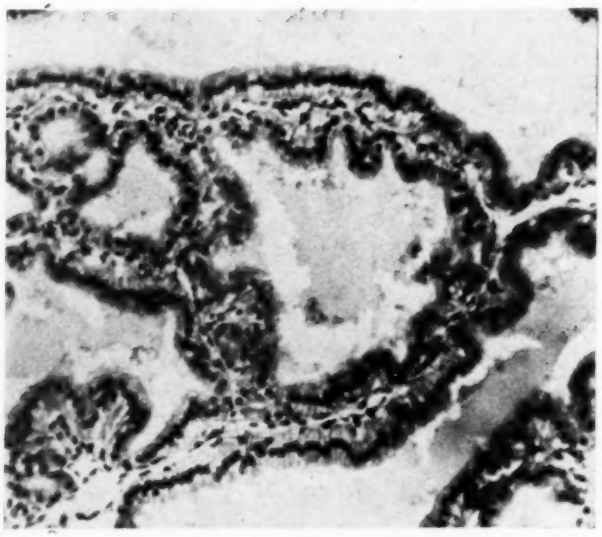


Fig. 3.—Microphotograph × 190—goitrous thyroid.

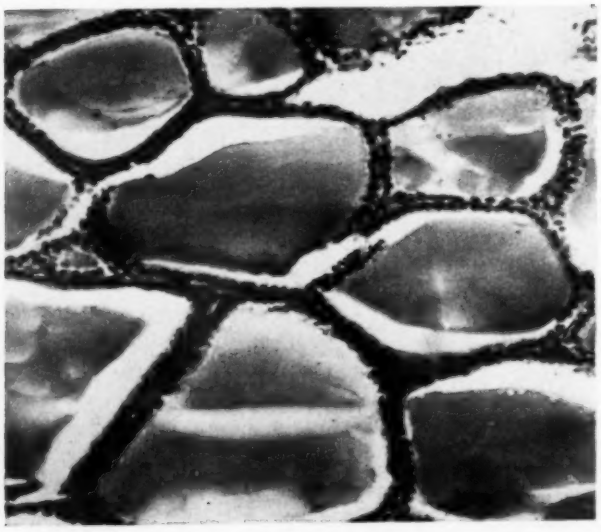


Fig. 4.—Microphotograph × 190—normal thyroid.

Discussion

Hypothyroidism as manifested in simple goitre is an enlargement of the thyroid gland associated with a marked drop in the normal iodine content of the gland. This enlargement usually occurs when the gland attempts to supply more thyroxine in an effort to maintain its normal function. There is no doubt that a deficiency of iodine in the food and water supply of the dams of these calves was responsible for the advanced symptoms of goitre at birth.

Definite information is lacking as to the iodine status of the Antigua soils. However, in view of the fact that these are the first recorded cases in cattle on the island and of the medical observations, the view is taken that there would appear to be a normal available soil content of this trace element, but that there are factors operating at the Central Experiment Station which interfere with its availability.

In searching for such factor, it should be pointed out that Mr. Hignett has conducted a preliminary investigation into a recently observed breeding problem in the herd at the Central Experiment Station. One of the conclusions reached was that the recognised high calcium and magnesium status of the pasture herbage and water supply was leading to conditioned deficiency of one or more trace elements.

The occurrence of these two cases of simple goitre tends to support Mr. Hignett's view as far as iodine is concerned. This deficiency was suspected by Mr. Hignett during the course of his investigations, a report on which it is hoped will be published later.

Acknowledgment.—I am most grateful to Mr. Hignett for his help in the preparation and submission of this report.

Society for Endocrinology

Officers and the Committee of the Society for Endocrinology have been elected as follows: Chairman, S. J. Folley; Hon. Secretaries, C. H. Gray and N. F. Maclagan; Hon. Treasurer, F. L. Warren; Editor of Society's Proceedings, S. Zuckerman; ordinary members of Committee: E. C. Amoroso, G. W. Harris, C. J. O. R. Morris and S. L. Simpson. Communications should be sent to the Hon. Secretary of the Society, Department of Chemical Pathology, King's College Hospital, Denmark Hill, London, S.E.5.

* * * * *

Veterinary Conference at Lyon.—At this conference, to be held at Lyon from June 19th to 22nd inclusive, the diseases, parasitic infestations, breeding, nutrition and hygiene of swine will be discussed under the leadership of Professors Blain, Coudert, Euzeby, Goret, Lepine, Lucam, Sohier and Verge; also of Drs. Bertrand, Ferrando, Fontenaille and Joubert. Meetings have been arranged with the learned societies of the Lyons Veterinary School; also an attractive social programme. Enquiries should be addressed to the School.

* * * * *

Mange Danger to Livestock Export Trade

Details regarding danger to the livestock export trade due to mange-infected animals have been sent by the National Cattle Breeders Association to all Breed Societies. The Livestock Export Group has previously referred to mange being discovered in cattle sent to Canada. "Many herd owners," says the Association, "do not realise that the condition of their cattle is due to this infection. Further, some are misled by the apparent recovery in summer due to the casting of the winter coat and the flush of grass, but these animals will certainly relapse into clinical mange during next winter unless treatment is given."

* * * * *

The Zoological Society

The election of Lord Chaplin as Secretary, in succession to Dr. Sheffield Neave, who has retired, was announced at the annual meeting of the Zoological Society of London, as was that of the Duke of Bedford, Mr. V. G. Davey, Sir Norman Kinnear, Mr. Maxwell Knight, Dr. Sheffield Neave and Professor J. C. Varley as ordinary members of Council. Lord Alanbrooke presided.

ABSTRACTS

Report of the Interdepartmental Committee on the Inspection of Meat*

Mr. Oake made it clear at the outset that his remarks were in the nature of personal comments, and not the official view of his department. The effect of the evidence given to the Committee was that all meat intended for sale for human consumption should be efficiently inspected. Whereas formerly the main emphasis in inspection was on the elimination of meat showing gross lesions, such as tuberculosis, there is now a wider recognition of the fact that the grosser carcase lesions do not necessarily represent the most important health risks which it is the inspector's duty to safeguard. As salmonella infections are often found unsupported by obvious carcase lesions, the Committee recommends regular *ante-mortem* inspection and a greater use of laboratory techniques. While ideally, *ante-mortem* inspection should be done by a veterinary surgeon, it will not generally be possible to do this in practice, and regular inspection by a lay meat inspector, or experienced stockman acting for him, is considered well worth having, to weed out unthrifty animals for slaughter apart from others. Thus the risk of contaminating wholesome meat will be reduced.

With appropriate training the simpler laboratory procedures, also, should be within the range of the lay inspector. In addition, these inspectors are to be encouraged to make use of the fully equipped laboratories on lines already followed in some instances.

On the training of the meat inspector, it is considered that the sanitary inspector is a conscientious public servant in the realm of meat inspection if his local authority allows him to devote proper time and attention to the work. The Scots control of meat inspection by the veterinary surgeon is not to apply to England and Wales as it would involve reducing the status of the present lay inspectors, and might affect the medical officer's responsibility for this work. This is not to argue that the training of a veterinary surgeon would not provide a more thorough theoretical background for meat inspection than is possible in the training of a sanitary inspector, but it is hardly likely that any great number of veterinary surgeons can be spared to specialise in meat inspection now, or for some time to come.

Where slaughtering is on a large enough scale a veterinary surgeon could be appointed as senior inspector to supervise a group of lay inspectors. Apart from this, the veterinary surgeon would be associated with meat inspection in an advisory capacity, leaving undiminished the responsibility of the lay inspector, under the medical officer of health. This would be as a veterinary consultant, much as the lay inspector would consult a bacteriologist or pathologist to confirm by diagnosis his suspicion of unusual or obscure conditions.

The Royal Sanitary Institute certificate for Inspection of Meat and Other Foods, or its Scots equivalent, should be made obligatory for all meat inspectors, and the training of such inspectors should include provision for instruction in *ante-mortem* inspection. Whilst meat inspection is primarily a public health function, it is recognised as being of interest to the veterinary profession for the light it can throw on the incidence of animal disease. For this reason record-keeping should be standardised.

As regards technique, (a) animals should be inspected before slaughter, (b) carcases and organs should be inspected at the time of slaughter, and (c) laboratory tests should be used to implement visual inspection.

Memorandum 62 (Foods) should be given statutory force, as in Scotland. Pig clubs and private pig-keepers should make their own arrangement for the inspection of meat by a veterinary surgeon or, of course, by a local authority official if the latter can spare the time. The Committee was vague about how meat inspection was to be made universal and compulsory, as in so many cases our slaughterhouses are structurally inadequate, and a considerable building programme is needed to provide suitable physical conditions for inspection. If meat inspection remains a local authority function it may need the help of the Local Authority Associations in finding a way of sharing out the cost of the service. Proposals about the hygienic construction of slaughterhouses have been drafted. Registration of premises should apply to the whole trade and the gradual wiping out of the sale of meat from stalls in the open air, but not in covered markets. Only minor changes are recommended for meat transport, and the sample inspection of imported meat is to continue as at present.

In the subsequent discussion, Dr. White (M.O.H. City of London) was of the opinion that the amount of illness in man from the consumption of diseased meat was small. Parasitic animal diseases of animals were now uncommon in this country, and acute fevers in animals should be detected by *ante-mortem* inspection. Mr. Lord (Sanitary Inspector, Luton) asked whether compulsory inspection of pig carcases killed for private pig-keepers was not necessary, as these people often passed a joint on to their friends. Mr. Gypps (Sanitary Inspector, Sevenoaks) wanted to know if the Committee had considered asking veterinary surgeons to state on casualty certificates the reason for sending in the animal, and what drugs had been administered. He thought *ante-mortem* inspection could be carried out at Collecting Centres where the grading was done.

Mr. Mackie (Health Inspector to the Port of London Authority) pointed out that whereas sanitation relating to road and rail meat traffic had been reviewed, no mention was made of waterborne traffic, such as lighters receiving cargoes overside from freighters. Mr. Lucas (Sanitary Inspector, Ware U.D.C.) wanted larger authorities to share the work among several inspectors, particularly as regards the keeping of compulsory records, and meat marking.

Dr. MacIntyre (M.O.H., Banstead U.D.C.) considered the Committee had been too timid in its approach to meat transport from depots to retailers. This was very unsatisfactory, as five years had elapsed since the war, yet this reprehensible system continued.

Mr. Greatorex (Royal Veterinary College) enquired whether the Committee had considered the Veterinary Surgeons Act of 1948 when recommending *ante-mortem* inspections by laymen. Had it also considered the advances made in the pathogenesis of tuberculosis since Memo. 62/Foods of 1922 was published? Mr. Stansbury (Chief Sanitary Inspector, Walsall) quoted evidence obtained by the Sanitary Inspectors Association stating that only about one-third of our present slaughterhouses would be capable of operating a meat-marketing scheme.

In replying to the discussion Mr. Oake agreed with Dr. White that the evidence suggested that more human illness was caused through contamination of meat after slaughter than from animal diseases. The small meat ration was

* **The Report of the Interdepartmental Committee on the Inspection of Meat.** The Benjamin Ward Richardson Lecture delivered at the Royal Sanitary Institute on June 20th, 1951, under the Chairmanship of Sir Wilson Jameson, G.B.E., K.C.B. (Vice-President), by G. R. Oake, Chairman of the Committee. *J. Roy. San. Inst.* **71.** No. 6. November, 1951.

XUM

likely to be cooked right through, and this might be a reason for the few clinical reports, during the post-war years, linking with a high incidence of *C. bovis*. Nevertheless, meat inspection should be as complete as possible. Private pig-keepers should have their meat inspected by a veterinary surgeon privately, but not compulsorily. The Committee had asked for veterinary certificates as desired by Mr. Gypps, as a condition for the admission for casualty animals. There had been no discussion about *ante-mortem* inspections taking place at Collecting Centres, nor about inland waterborne transport. It was better to eliminate disease at the source if possible, and for that reason records should be kept, in spite of the difficulties. There were practical difficulties about improvement in meat transport, but this was mainly in the hands of local authorities.

Replying to Mr. Greatorex, Mr. Oake thought the difficulty was mainly one of language. The *ante-mortem* inspection recommended would be no more than a look at the posture and general condition of the animals so as to segregate those needing special consideration at the *post-mortem* examination. Mr. Oake hoped this would not clash with the Veterinary Surgeons Act.

Veterinary experts were amongst those consulted about the wording of the Revised Memo. 62/Foods, and their recommendations would satisfy the object Mr. Greatorex had in mind. The unsatisfactory nature of many slaughter-houses was brought to light by visits the Committee made.

D. J. A.

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Nutrition and Susceptibility to Infection*

This article is a general survey of the extensive work on the subject of susceptibility to infection. It is quite clear that the main difficulty is to establish suitable criteria upon which to pass a judgment. In general, the only measurement of resistance is the survival rate and there are so many factors involved, both nutritional and environmental, that it has been difficult to sift out the importance of one as compared with another. Mice formed the majority of the experimental animals, chosen because of their cheapness, rapidity of reproduction, etc.

It is interesting to note that whole wheat must now be considered as possibly having some anti-infective properties, especially in relation to salmonella infections. This substance proved to be more efficacious when compared with such materials as dried cooked potato meal, maize, whole rye and whole rice. Mice reared on oats and potatoes remained undersized and proved to be extremely susceptible to infection, in comparison with those raised on a whole wheat diet. Even whole dried milk was not so beneficial when substituted for the wheat. Investigations in this field are also complicated by the fact that there are a variety of infecting agents which have different nutritional needs. In many of the experiments, poorly nourished animals proved to be less susceptible to virus infection, for instance, than those which were better fed, which indicates that the nutritional status of the individual may be a thing apart, not necessarily having any influence upon infections.

N. S. B.

* **Nutrition and Susceptibility to Infection.** Howie, J. W. (1951.) *Brit. J. Nutrit.* **2.** 331.

Weekly Wisdom

They [agricultural workers] *see those in less important industries getting more for doing less. . . . Farm workers are drifting away to other industries at the rate of nearly* 10,000 *a year. This is something that must be stopped at all costs.*—"The Farmer & Stock-Breeder."

REVIEW

[Portrait of a Surgeon. By Ernest A. Gray, M.Sc. (Cantab.), M.R.C.V.S. Published by Robert Hale, 63, Old Brompton Road, London. Price 16s.]

The "Portrait of a Surgeon," by Ernest A. Gray, who is a well-known member of our profession, is a study and full-length portrait of John Hunter, the most outstanding and original scientist—at least in these islands and possibly in the whole world—of the 18th century. He was an original thinker but based his conclusions on his experiences with, and knowledge of, animals and plants; in fact, he drew his inspiration from all nature and approached all problems from a practical commonsense angle.

Mr. Gray writes in the first chapter of this most interesting, indeed enthralling, biography that "more goes into a portrait than paint and canvas. Behind the painted figure lies all that the artist struggles to catch—the long crowded road from childhood that has made the subject"; and in his biography of John Hunter—anatomist, surgeon, biologist and philosopher—we travel that road with Ernest Gray as our guide, and a wonderfully interesting and delightful journey it is, for he takes us through the whole period of Georgian Medicine. In fact, this work also gives an artistic and intimate cameo of Georgian London, and we are fortunate to have it so pleasantly presented, with such a wealth of interesting and instructive detail concerning the lives and behaviour of all classes during that most important period. We have also glimpses of happenings on the Continent with particulars relating to Military Medicine and Hospitals as we follow John Hunter to the Peninsula, when he was appointed surgeon in the Army.

John Hunter came of hard-working, intelligent middle-class stock and from north of the Tweed. On reading this book, the reviewer is reminded of a saying he is inclined to attribute to Sir Oliver Lodge, that "Whatever the mind of Man can imagine is possible of accomplishment." This statement may appear rather extreme, but in the case of John Hunter, at least, it is demonstrably seen to be true, when we consider what he accomplished in his comparatively short life, and the fact that, owing to his tragic and sudden death, his notes and records were not left in a manner likely to increase his prestige, or to allow us to evaluate correctly the extent of his work. Most of the things Hunter did accomplish were then considered impossible by his medical and scientific contemporaries, and many of his theories, which were taboo in his day, have since been substantiated. His faith in his own opinions, which were based on common sense and practical experience and were arrived at only after careful and logical consideration of matters of fact, was an outstanding feature of his character—especially when we consider the severe and often dangerous opposition aroused by any theories that were even bordering on the unorthodox. For instance, when in a paper to the Royal Society he stated that some fossil animals he had found must have taken many thousands of centuries to form—which was at variance with the accepted story in Genesis, which was then taken literally—the Secretary asked him to change it to "many thousand years," which he refused to do and the article was withdrawn. After his death the change was made by his executor. As an indication of the then prevalent fear of the unorthodox, it was thought, by his acting executor, that many of the ideas and opinions in his notes were heterodox, with the result that in his mistaken zeal to preserve Hunter's good name and to prevent the promulgation of such ideas, he had an enormous quantity of manuscripts and notes—"a cart load"—destroyed. An

ancient Persian philosopher claimed that the "only indestructible thing in the world is Truth." In the last war severe damage was sustained by the museum in the Royal College of Surgeons which Hunter founded; in Room 111 (which was totally gutted by fire) was the statue of John Hunter protected by a casing of brick, which, when removed, revealed the statue unharmed—it seems almost as if the Spirit of Truth had protected the memorial of its humble but unswerving apostle.

In the notes that have survived, which are so ably discussed by Mr. Gray, there is sufficient evidence to assume that Hunter was in many cases centuries ahead of his time. In his report on his dissections of nearly 500 species, Hunter stated that, comparing the anatomy of monkeys, apes and lemurs, he regarded the monkey as "half man, half beast," thus anticipating much of the work of Darwin.

Hunter's energy and appetite for work is almost unbelievable. He was usually in his dissecting-room at 4 a.m., preparing specimens for his museums. He always believed in practical tests, and so, in his investigations on bees, he destroyed four hives and examined between 12,000 and 15,000 bees to determine whether any males were left after the fertilising of the queen.

Hunter also found time to take part in controversies on many varied subjects of scientific thought. The statement of the Italian Abbe Spallanzi that the stones found in the gizzards of birds got there by accident was disputed—and Hunter pointed out exactly what is now definitely established, that the stones assist in digestion by breaking down the grain to enable the gastric juices to act more intimately and so assisting them to pass through other processes. He even refers to the same operation in the gillaroo trout. He was also insistent that the blood was the life-giving fluid—and must not be wasted. He was against the prevalent practice of continuous and excessive bleeding, which shows how far ahead he was of medical knowledge of that time; the reviewer recollects a story told him, when a student, by the late William Hunting, that one of *his* examiners required only one answer to all his questions relating to treatment—"Bleed, blister and physic." Hunter revolutionised the surgical treatment for aneurism, based on an experiment on a deer in Richmond Park, when he tied up the artery supplying the antler and found that the blood was supplied by other smaller vessels—and the antler did not rot off.

Hunter carried out artificial insemination with success 200 years ago, and frequently practised skin-grafting—which idea seems to have originated with his experiments on trees and plants and the lower animals. He even grafted a tooth into the comb of a cockerel, and by subsequent treatment of the preserved specimen proved that the blood supply had been established. He fed young pigs on madder in their food, and showed that the growth of the teeth subsequent to this addition was coloured, whilst the previous growth was not altered. He experimented with the mating of wolves and dogs—some of the progeny of which found their way into Ireland. Perhaps some of the later types of Irish wolfhound may owe something to Hunter, who also kept a most remarkable private zoo or menagerie at his house at Earl's Court, which included zebras, jackals, leopards, buffaloes and a pond with all manner of fish and aquatic life. He frequently applied to his friends who happened to be abroad for animals and specimens, and, it appears, did not bother about spelling, *e.g.*, we find him writing for "a foall camell—put it in a tub of spirits and send it to me."

Hunter's fame was world wide. Students came to him from all parts. Walstein, from Austria, later to become the head of the Vienna Veterinary Institute, has been described as the founder of veterinary science in the German-speaking countries. James McCarthy, from Armagh, became Professor of Medicine in Trinity College, Dublin, from 1813 to 1837. From America, with his father, came Philip Syng Physick who, after a distinguished course as House Surgeon in St. George's Hospital, returned to America and became known as the father of American surgery; also William Shippen, who, on his return, gave the first course of lectures on the subject ever held in America and was one of the founders of the famous University of Philadelphia and did for anatomy what Physick had done for surgery.

John Hunter was the moving spirit behind the project to found a Veterinary School at Camden Town. The Odiham Society had raised money to send young men to the French Veterinary School at Alfort, but on the outbreak of the French Revolution the idea was abandoned. Among the refugees from Alfort, however, was Charles St Bel, so the money was used to found a veterinary college at Camden Town and St Bel was appointed its first Principal. Unfortunately, St Bel died from glanders contracted while dissecting a glandered horse, and Hunter a short time later, the latter having arranged for an entrance examination and a three-year course in Anatomy, Physiology, Materia Medica and Pathology, along with the usual subjects of Surgery and Medicine.

George Coleman, who was then appointed Principal, was a surgeon who knew nothing of veterinary matters. Apparently interested only in self-aggrandisement, he cut the course down to six months and allowed all and sundry to enter at will without any educational entrance examination—which beginning, at such a low level, was responsible for our slow progress for 100 years. The loss to the veterinary profession and animal welfare by the untimely death of Hunter can never be estimated.

Mr. Gray includes an interesting reprint of the advertisement announcing the formation of the Veterinary College at a general meeting held at the Blenheim coffee house, New Bond Street, on April 8th, 1791, when Hunter was appointed one of the Vice-Presidents.

It is impossible to give an adequate appreciation of this excellent book in a short review. The difficulty has been to try from such an amount of interesting detail to select what is the most important from the veterinary standpoint. Members of the veterinary profession are deeply indebted to their distinguished colleague, Mr. Gray, for this most fascinating work of research in a branch of literature which, it is to be regretted, has attracted very few of our profession. This book has to be read to appreciate the enormous amount of research and study that its production entailed. "Portrait of a Surgeon" should be in the library of every veterinary surgeon.

PROPOSED CENTRAL AFRICAN FEDERATION: THE AGRICULTURAL ASPECT

As was to be expected, agriculture figured prominently in certain of the discussions at the conference on Central African federation which has been sitting in London for some days. In its report of the proceedings *The Times* stated that the question of whether agricultural services should be federal or territorial had aroused some controversy both inside and outside the conference. "On grounds of efficiency, there is a great deal to be said for a unified service. On the other hand, agriculture is one of those activities which is most intimately bound up with the life of the African and it has been the principle so far that such subjects should remain within the purview of the territorial Governments. A third solution may lie along the lines already adopted in Southern Rhodesia. Here there is an agricultural department which deals exclusively with European farming, and another which exists as a branch of the Native Affairs department. This system has proved markedly successful in Southern Rhodesia and its application on a federal scale, leaving European agriculture as a federal service and African agriculture as a territorial one, might be possible. The question of agricultural and kindred services, such as forestry and veterinary, was referred finally to a sub-committee for detailed examination."

MEMOIR

Delwin Morton Campbell

As recorded in your issue of April 26th, Delwin M. Campbell, D.V.S., who was born at Big Springs, Kansas, on January 19th, 1880, died on March 27th, 1952, at his home in Chicago, Illinois.

Dr. Campbell was best known to British veterinarians as the Editor of *Veterinary Medicine* and as the organiser of parties of his American colleagues attending International Veterinary Congresses in various parts of the world, but in America he was recognised as a leader in many fields of veterinary medicine.

As his name suggests, his parents were of Scottish stock, his mother being a Mitchell and his father a Campbell, and he had in his wide interests and pioneer spirit much that we claim is characteristic of the British race.

For a short time in his early days he was a teacher in a country school. Then he entered the Kansas City Veterinary College and graduated D.V.S. in 1907. For two years he was engaged in general veterinary practice before being selected in 1909 to organise the milk inspection service of the city of Topeka. In 1910 he was invited by Dr. Abbott to establish the veterinary department of the Abbott Laboratories, which he did with his customary energy and efficiency. Then he returned to general practice in Evanston, Illinois, where he remained from 1912 to 1919.

Even before this time Dr. Campbell had shown great interest in veterinary journalism. In 1908 he restarted the *Missouri Valley Veterinary Bulletin*, which had lapsed publication in the previous year, and in 1910 he changed its name to the *American Journal of Veterinary Medicine*. In 1920 the journal was incorporated under the Veterinary Magazine Corporation as *Veterinary Medicine*. Dr. Campbell continued as President of the Corporation and Editor of *Veterinary Medicine* until May, 1949, when he was succeeded by Dr. Anderes, the present Editor. This period was notable for the publication by Dr. Campbell of the first American books for veterinarians, books which showed a full appreciation of the needs of the practitioner and which at the same time maintained a high literary and publishing standard. After 1920 Dr. Campbell continued the publication of this series of books and in addition, as co-author with L. A. Merillat, wrote the two volumes of "Veterinary Military History," which were published in 1935. In 1944 he received the Award of Merit of Magazine Industrial Marketing for the best published research in that year, and in 1949 he was further honoured by the same body by receiving First Award for Editorial Achievement.

Despite these many activities, Dr. Campbell found time to play a most important part in the work of American veterinary organisations and associations. He was Chairman of the Publicity Committee and a member of the Organising Committee of the 12th International Veterinary Congress in New York in 1934, and in all he attended no less than five of the International Veterinary Congresses, those of 1914, 1930, 1934, 1938 and 1949. He was President of the Chicago Veterinary Association and its Secretary for four years, President of the Missouri Valley Veterinary Association, and Secretary of the Illinois Veterinary Medical Association for four years. He served as Secretary of the United States Livestock Sanitary Association for two years and was a member of many of its committees until the time of his death.

In the Army he had a distinguished career. Appointed Major in the Veterinary Officer Reserve Corps in 1922 he attended the Medical Field Officers Service School, taking first place in his class in which he was the only veterinarian. He was promoted Lieut.-Colonel in 1930. During the Second World War he took up active service in 1941 when he organised the first Army Veterinary General Hospital at Fort Bliss, Texas. He commanded this hospital until 1942 when he became an instructor in the Medical Field Service School. He served next at Fort Custer, Michigan, as Chief Veterinarian and retired as a full Colonel in 1944 on reaching the statutory age limit.

Dr. Campbell's record is a testimony to his ability in professional veterinary affairs but much of his success was due to his pleasing and happy personality and his knack of getting on well with people under all sorts of conditions and circumstances. In a country where co-operation is at a high level, he invariably showed outstanding properties of helpfulness. His advice was freely sought and always as freely given. He was widely popular and at the same time highly respected, and he gave himself unsparingly in the service of his profession.

Always kind and considerate despite the many calls upon him, he found time to deal with all his visitors, acquaintances and friends with courtesy and great charm. His correspondence was voluminous and to a lesser man would have been frightening, but he dealt with it expeditiously and efficiently, and through it made friends in all parts of the world.

Perhaps his greatest interest was in promoting veterinary progress on an international basis. As has been said, he was a most constant attender at the International Veterinary Congresses and he used all his persuasiveness to ensure that as many of his American colleagues as possible joined him. He believed deeply and sincerely in the great part which the veterinary profession has to play in world affairs and throughout his life he did all he could to promote and to further schemes of national and international veterinary co-operation.

Delwin Campbell was one of the great men of world veterinary science and the progress of the profession throughout the globe owes much to his genius. But essentially he remained a simple man, unspoiled by success and always finding new interests in his professional work. His has been essentially a good job well done.

D. D. Ogilvie.

DOMESTIC POULTRY KEEPERS' COUNCIL

Under the chairmanship of Lord Macpherson, an informal meeting was held on Saturday, May 3rd, 1952, in London, between representatives of 30 County Federations and members of the Domestic Poultry Keepers' Council to discuss the proposed national independent organisation for domestic poultry keepers.

The meeting agreed that the new organisation should be known as "The National Domestic Poultry Keepers' Council" and that its affairs should be conducted by an Executive Committee consisting of 12 members. For this purpose the county has been divided into 12 regions and one member will be elected to the Committee by postal ballot of the affiliated clubs within each region.

It is intended that a full-time General Secretary and staff shall be employed, and applications for the post of General Secretary will in due course be sought by public advertisement. In the meantime, the Ministry of Agriculture and Fisheries will give secretarial assistance.

The meeting also agreed that for the supreme government of the new Council, arrangements should be made for the holding of an annual conference. Each County Federation would send one delegate to the conference for each 500 members or part thereof.

The first annual conference will be held on Saturday, July 12th, 1952, at 11, Carlton House Terrace, S.W.1, and will be opened by Mr. G. R. H. Nugent, M.P., Parliamentary Secretary (Commons) to the Ministry of Agriculture and Fisheries and Chairman of the National Council for Domestic Food Production. From this date the new organisation will take over the work of the present Domestic Poultry Keepers' Council, which was appointed by the Minister of Agriculture and Fisheries.

Poultry Stock Improvement Plan: Poultry Breeding Stations

Particulars of the scheme for accrediting poultry breeding stations under the Accredited Section of the Poultry Stock Improvement Plan and forms of application for admittance to the plan for the 1952-53 season may now be obtained by owners of poultry breeding stations from their County Agricultural Executive Committees, states a Ministry of Agriculture announcement, which continues: "The Ministry and the members of the Poultry Stock Improvement Plan do not lose interest in the health of stock immediately it leaves accredited premises. Arrangements have been made to extend the free veterinary service at present granted to members of the plan by carrying out *post-mortem* examinations free of charge on the carcase of any bird which dies within 28 days after leaving an accredited breeding station or accredited hatchery. Carcases sent in for examination under this new arrangement should be accompanied by a statement showing the name and address of the breeding station or hatchery from which the stock was bought, and the date on which it was delivered.

"Poultry keepers who live in Cumberland, Westmorland, Northumberland, Durham, Lancashire or Yorkshire should send *post-mortem* specimens to the Veterinary Laboratory, Eskgrove, Lasswade, Midlothian (station: Bonnyrigg, Scottish Region). Specimens from the remainder of England and from Wales should be sent to the Veterinary Laboratory, New Haw, Weybridge, Surrey (station: Addlestone, Southern Region). Specimens must be securely packed in a box with sufficient absorbent material to prevent leakage of any of the contents during transit; carriage must be prepaid and the package should bear the name and address of the sender."

The Present Foot-and-Mouth Disease Position

BRITISH VETERINARY ASSOCIATION STATEMENT

The following statement on the present foot-and-mouth disease position was issued to the lay Press by the British Veterinary Association on May 7th :—

The present nation-wide standstill order may have given the impression that the outbreak of this disease has assumed alarming proportions. This, however, is not so and the position though serious should not affect meat supplies unduly. About 60 per cent. of all cattle slaughtered are salvaged by the Ministry for meat and some two-thirds of all sheep and pigs slaughtered are salvaged also.

Questions are being asked why the policy of vaccination could not be substituted for that of slaughter or at least used as a supplement to it, but it is obvious from the epidemics in Western Europe, where vaccination has been practised for years, that this in itself is not an answer to the problem. For example, in 1951 there were more than 10,000 outbreaks of foot-and-mouth disease in France, while the infection figures for Germany and Belgium were over 20,000 per month towards the end of the year. In the year 1937-38 the disease is estimated to have cost German farmers £83,000,000 in spite of their policy of vaccination, while in Great Britain, during the 10 years 1941-51, compensation paid to farmers for slaughter was only approximately £222,000 per annum.

It is essential to remember that foot-and-mouth disease is not endemic in Great Britain and must not be allowed to become so. The slaughter policy is the right method of prevention.

There is yet another risk in the policy of vaccination instead of slaughter. A vaccinated animal may reach a stage when its resistance, whilst sufficient to mask the lesions of the disease, is not adequate to prevent the multiplication of the virus and its dissemination from the animal's body. Thus while showing no visible evidence of disease it may well be a danger to non-vaccinated stock.

Owing to the number of variants in foot-and-mouth disease, vaccines to be of any value must be prepared from the type of variant or virus responsible for the particular outbreak. Polyvalent vaccines have been produced, but so far they have not proved very effective. In any case, the immunity conferred by vaccines is of relatively short duration, probably not more than six months, so that revaccination would be necessary at fairly short intervals. The immunisation of animals after an outbreak has occurred is not effective in preventing the spread of the disease because it does not produce immunity for two to three weeks, by which time the infection, which is of an exceedingly acute nature, may have spread far and wide.

The slaughter policy, then, supported as it is by informed and official farming opinion, has served the nation well and remains the best and most effective.

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Refutation of Criticism of Slaughter Policy and Imposition of Standstill Order

Contributing to correspondence in *The Times*, Dr. W. R. Wooldridge, Scientific Director of the Animal Health Trust, made the following points in the issue of May 9th:—

"The extent of the present development of foot-and-mouth disease in this country is not [as an earlier correspondent had stated] unprecedented since 1886. The outbreaks of 1923 and 1924 were very much more serious. Even in 1942 there were as many as 256 in one county, whereas in the present epizootic the total since November 14th last has only been 258. In the present instance an entirely wrong impression has been created over the question of loss of meat, for over 50 per cent. of cattle and two-thirds of all sheep and pigs slaughtered as a result of our present policy are, in fact, salved as meat. Thus the loss of meat arising from our 258 outbreaks, for instance, is very considerably less than the more indirect loss which would arise if this country changed its policy and had the 10,000 outbreaks which occurred in France last year or the 20,000 outbreaks experienced in Germany and Belgium in each of the latter months of 1951. It is true the disease can be cured, although the mortality may, with certain virulent strains, be extremely high. Nevertheless, during the course of the illness the production of milk and meat by the affected animals is materially reduced.

"What makes the present outbreak appear exceptional is the bold step taken by the Minister of Agriculture in imposing a complete standstill order for the major part of Great Britain until his veterinary officers have followed up every possible spread of infection from Stirling Market. We are always clamouring for preventive measures, yet here, when the State immediately adopts a most valuable step of this character, it causes an outcry. It is perhaps not out of place to say that the efficiency of the veterinary police measures carried out by the Animal Health Division is the envy of the veterinary profession throughout the world. The Minister, from his great experience, knows that no interim measures would be effective. Even in the twenties, when certain affected valuable pedigree herds were placed in isolation, the disease spread after recovered animals were moved to other premises following the lifting of the quarantine restrictions. It should not be forgotten that owners of affected pedigree herds are compensated for their loss on a pedigree valuation. This should enable them to reconstitute their herds from the invaluable stock already provided to other farmers from that particular herd.

"Finally, may I comment on the view expressed in certain journals that the present slaughter policy is maintained by a myopic profession in its own interests? Nothing would be more remunerative to the veterinary profession than a change in policy which would enable foot-and-mouth disease to become endemic in this country and keep its members continuously busy treating affected animals. The profession, however, in the face of the scientific facts are wholeheartedly behind the Government in the maintenance of the slaughter policy, because it is to the advantage of the country on grounds of economy and food production."

This letter was in reply to Lord Bledisloe and we are pleased to note that, responding to it in *The Times* two days later, Lord Bledisloe accepted the point of view expressed by the Minister of Agriculture in Parliament and by Dr. Wooldridge in his letter, and withdrew his call for a change in the present policy of slaughter.

IN PARLIAMENT

Foot-and-Mouth Disease

Standstill Order for Livestock: Failure of Effort to Secure Debate

In the House of Commons on May 8th, Mr. Anthony Fell rose after questions, saying: I wish to raise a definite matter of urgent public importance, namely, the national standstill order enforced from to-day on the movement of livestock resulting from foot-and-mouth disease notification, and to move the Adjournment of the House.

Mr. Speaker: The hon. Gentleman has asked leave to move the Adjournment of the House to raise a definite matter of public importance, namely, the national standstill order enforced on the movement of livestock resulting from foot-and-mouth disease notification. I find this matter impossible to bring within the limits of the Standing Order on the grounds of urgency. This policy which is being applied by the standstill order arises out of legislation passed by this House, and has been a policy of a long continuing character for many years. Though it is no doubt urgent from the agricultural point of view, I cannot find it urgent from the point of view of the Standing Order.

Mr. R. T. Paget: I wish to raise a matter for information. Is there not a distinction between the standstill orders which we have been accustomed to and which have been part of the law for four years but which were confined to a radius of 15 miles outward, and this entirely new and quite unprecedented order applying to the whole country? It is a standstill order of all the cattle everywhere in the country. That, in my submission, is something entirely new, and its implications, I think, are a matter of very great urgency. It is one thing to say that this policy is worthwhile when it is confined to a small area; it is another to say that the whole cattle trade of the country has to be brought to a standstill.

Mr. Speaker: I have listened with great care to what the hon. and learned Gentleman has said, and I appreciate that a universal standstill order does differ in degree from the normal standstill orders in different pars of the country, but I cannot agree that for the purpose of the Standing Order this action, which is taken in pursuance of legislation passed by this House and is of long standing continuance, falls within the Standing Order.

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XUM

Questions

Foot-and-Mouth Disease: The Minister's Statement

At Question time in the House of Commons on May 8th, the following questions stood upon the Order Paper:—

53. Mr. Robert Crouch,—To ask the Minister of Agriculture what sum of money is being spent annually in research on foot-and-mouth disease.

59. Mr. T. Driberg,—To ask the Minister of Agriculture if he will publish in *Hansard* a full statement of the progress made in recent years in research into foot-and-mouth disease; whether this research has the highest priority on all necessary financial and other resources; and how soon he anticipates that it will be possible to deal with outbreaks of this disease other than by complete destruction of infected herds.

64 and 65. Sir Ralph Glyn,—To ask the Minister of Agriculture (1) what evidence he has that the virus of the present outbreak of foot-and-mouth disease is new; whether it has yet been properly identified; how long animals take to recover; and, during the present outbreak, how many animals have been slaughtered as possible contacts but have not actually contracted the disease;

(2) whether, after consultation with the Lord President of the Council, he will consider the setting up immediately of a Veterinary Research Council on the same lines as the Medical and Agricultural Research Councils, but with the special object of co-operating with veterinary services in British Dominions and Colonies, with a view to establishing a better understanding of purely veterinary problems, especially foot-and-mouth disease.

67. Mr. Anthony Hurd,—To ask the Minister of Agriculture if he will appoint a standing conference drawn from research scientists, the veterinary profession, the Royal Agricultural Society of England, the National Farmers' Union and other representative agricultural bodies to keep under review Britain's policy on foot-and-mouth disease so that all may be assured that the best advice is being taken in deciding and carrying out national policy.

The Minister of Agriculture (Major Sir Thomas Dugdale): With your permission, Sir, and the permission of the House, I should like to answer Questions 53, 59, 64, 65 and 67.

The present situation is serious, but it is certainly not unprecedented, and unless it deteriorates very seriously, I have no doubt that it can be brought under control.

Since November, 1951, until midday to-day, there have been 258 outbreaks of the disease in this country. This should be compared with the experience of Denmark, where 26,000 outbreaks have occurred in the last six months, and that of Holland, where there have been 23,000 in roughly the same period. Western Germany has suffered much more severely. There the total number of outbreaks in 1951 was 155,000. The outbreaks that occurred in the United Kingdom in the winter of 1937-38 and in 1941 were comparable in severity to the present one, and there were much more serious outbreaks in each of the years 1922-24 and in 1942. In every case the disease was stamped out, to the immense benefit of the flocks and herds of this country, of meat and milk production and of our valuable export trade in pedigree stock.

Movement and marketing restrictions have been imposed over most of Great Britain because of the danger of infection having been spread through two markets. This is purely a holding operation while the veterinary staff of my Department are tracing and keeping under observation the animals concerned, which have been dispersed over a wide area. When that operation has been completed, I hope it will be possible to make substantial reductions in the area under control.

Research on foot-and-mouth disease is carried out at the Foot-and-Mouth Disease Research Institute at Pirbright. A total of £93,540 has been provided for grants to this Institute in my Department's Estimates for the current financial year, and with the approval of the Treasury considerably increased funds are being made available for the development of the station. The governing body will in future be publishing an Annual Report. The *Official Report*, I would suggest, is not a suitable medium for the publication of reports on scientific work. My veterinary advisers keep in the closest touch with the progress of scientific research, not only at the Pirbright Institute but at similar centres overseas. In addition, machinery exists through the medium of the Agricultural Research Council, and the Agricultural Improvement Council for ensuring that any results of research which may have a bearing on administration and policy are brought to my notice. I do not consider that any new body is required for this purpose. I have asked the Chairman of the Agricultural Improvement Council to bring the matter up specially at the next meeting of the Council.

I have no evidence that the virus of the present outbreak of foot-and-mouth disease is new. It has been identified as type "A." Recent experience on the Continent with this virus has shown that a number of animals, particularly young animals, die, and the time taken by others to recover varies considerably.

As it is not possible to say in every case whether, at the time of slaughter, a contact animal has contracted the disease, no figures are available as to the number of unaffected animals which have been killed.

Finally, I would ask the House to accept my earnest assurance that there is no question whatever that in the present state of our scientific knowledge, the abandonment, or even relaxation, of the slaughter policy would involve the livestock industry of this country in the gravest disaster since the days of the cattle plague of the 19th century, with incalculable consequences to our meat and milk supplies.

All responsible agricultural organisations are emphatic in the view that the slaughter policy is the best method of dealing with the disease in this country.

Sir R. Glyn: Is my right hon. and gallant Friend aware that in 1947 the Ministry of Agriculture stated that they would produce a report of the work done at Pirbright? Whilst there is, according to my right hon. and gallant Friend, to be an annual report, can he take steps to publish as early as possible a report on the very valuable work which that department has done?

Sir T. Dugdale: I will look into that.

Mr. Somerville Hastings: May I ask the Minister whether the help of the Medical Research Council, which lately has been carrying out useful researches in connection with virus diseases, has been asked for?

Sir T. Dugdale: I could not answer that question to-day, but I will certainly see that it is looked into.

Mr. Hurd: May we take it that from now onwards it will be a definite and regular responsibility of the Agricultural Improvement Council to gather together scientific information and to link this with the administration of our slaughter policy and to advise the Minister regularly, so that in future there are no gaps between research discoveries and the administration of policy?

Sir T. Dugdale: Yes, Sir. I think that the Council is a very suitable body to perform that task, and I will make certain that that takes place.

Mr. Driberg: Can the right hon. and gallant Gentleman say whether there has in fact been any significant advance in recent years in the knowledge and treatment of this disease? Would he also be good enough to answer more precisely the second part of Question 59; whether this research has as high a priority as, for instance, atomic research, scientific manpower and equipment as well as finance?

Sir T. Dugdale: I cannot answer the second part of that Question, but I can say that so far as my Department is concerned, it has absolutely first priority, and I am giving the very greatest consideration to all aspects of research in this very great problem.

Mr. Driberg: Could the right hon. and gallant Gentleman answer the first part of the supplementary question—has there been any significant advance in knowledge and treatment in recent years?

Sir T. Dugdale: My answer to that is that from everything I can learn I understand that our station at Pirbright is considered throughout the world as being the most advanced in the researches they are making into this great problem.

Brigadier O. L. Prior-Palmer: In view of the fact that Imperial Chemical Industries have found a serum against the tsetse fly menace in Africa, is their advice sought at Pirbright in this matter?

Sir T. Dugdale: Pirbright do take all advice from all sources.

Mr. R. T. Paget: Is not the trouble the fact that if we did get an efficient vaccine, the cost of inoculation would be still higher than the cost of the slaughter policy?

Sir T. Dugdale: I think that is correct to start with, but the real problem of immunisation is that it takes two or three weeks to develop immunity and in that time infection could have spread very far and wide.

Lieut.-Colonel Sir Thomas Moore: Could we know what proportion of the animals so slaughtered are suitable for use for human food?

Sir T. Dugdale: A very large proportion now; it depends on whether they are cattle, pigs or sheep, but a very large proportion.

Mr. Harold Davies: Does the right hon. and gallant Gentleman

think it might be worth while for his Ministry to take the initiative in calling an all-European agricultural scientific conference to deal only with this problem at this moment? Secondly, may I ask him to consider the possibility ultimately of expanding the veterinary service, in view of the fact that we have only about 94 veterinary surgeons per million animals, and that is one of the lowest proportions in the advanced countries of the world?

Sir T. Dugdale: I would answer that question this way: I think it might interest the House to know that my Department keeps in very close touch with the work of F.A.O. in this field, and hon. Members may be interested to know that Sir Thomas Dalling, who was until recently my Department's Chief Veterinary Officer, has now taken up the post of Chief Veterinary Officer with F.A.O., with the particular object of trying to do something to deal with this disease on the Continent of Europe.

Major H. Legge-Bourke: Will my right hon. and gallant Friend bear in mind that there is a considerable number of agricultural shows due to take place at a fairly early date? Will he do everything in his power to arrange that his Department give the earliest possible information to those organising those shows, if there is the remotest possibility of their having the shows, after all?

Sir T. Dugdale: Yes, Sir.

Mr. Crouch: Is my right hon. and gallant Friend aware that his reply will be received with a great deal of satisfaction in the agricultural community, because they have always been behind the slaughter policy and the figures he has given us this afternoon have proved that the slaughter policy is right? Is he aware that his statement will cause a great deal of relief among the non-agricultural community, who are anxious about this question?

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Standstill Orders

Mr. Deedes (May 7th) asked the Minister of Agriculture if he will consult with the Minister of Food with a view to reviewing the effect of the foot-and-mouth disease standstill orders on pig breeders owing to the serious loss of feeding-stuffs and money involved to breeders who cannot send their pigs to market or slaughter.

Sir T. Dugdale: Every effort is made by my Department and the Ministry of Food to see that there is as little delay as possible in the marketing of pigs which are ready for slaughter. I regret that some hold-ups do occur, but I could not agree to any general or substantial modification of the foot-and-mouth disease restrictions which would defeat the object for which they are imposed, and I have no power to pay compensation for any consequential loss that farmers or others may suffer.

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Animal Diseases Regulations (Administration)

Mr. Robert Boothby (May 6th) asked the Prime Minister if he will take steps to transfer the responsibility for administering the regulations with regard to diseases of animals, so far as Scotland is concerned, from the Minister of Agriculture to the Secretary of State for Scotland.

The Prime Minister: It is thought more prudent to keep centralised control at this moment.

Mr. Boothby: Is my right hon. Friend aware that if the Secretary of State had similar powers to those of the Government of Northern Ireland he would be able to prohibit the importation of cattle across the Border from England whenever an outbreak of foot-and-mouth disease was confirmed? If he had had powers do this, it might have prevented infected cattle from reaching Scotland, which is now regarded by the Dominions and the United States of America as one of the very few clean countries in the world.

Mr. Thomas Williams: Is the right hon. Gentleman not also aware that the chief veterinary officer for the whole of Scotland is in the Secretary of State's office in Edinburgh, and that the scheme has worked well for 15 years without any complaint from hon. Members opposite?

Mr. Boothby: Is my right hon. Friend aware that there is a torrent of complaints from Scotland at the present time?

The Prime Minister: I am sure my hon. Friend would be fully capable of giving full vent to any such torrent, but the difficulty is that we are not sure that foot-and-mouth disease is as well educated on the subject of borders and questions arising out of them as he is.

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Fowl Pest

Mr. Janner (May 7th) asked the Minister of Agriculture what progress has been made in regard to the measures taken to combat fowl pest in this country.

Sir T. Dugdale: The measures being taken to combat fowl pest are resulting in a reduction of the incidence of the disease. In the first four months of 1952 there were 100 outbreaks of fowl pest in Great Britain affecting 13 counties, compared with 457 outbreaks, spread over 57 counties, in the same period last year.

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EXPERIMENTAL SLAUGHTERHOUSES (VETERINARY SUPERVISION)

Mr. Philips Price (May 7th) asked the Minister of Food how far, having regard to the recommendations of the Inter-Departmental Committee on Meat Inspection, he has arranged for each of the experimental and demonstration slaughterhouses to be under the supervision of a veterinary officer, in order to ensure the efficient *ante-mortem* inspection of all animals received for slaughter, the highest standard of meat inspection and also the most expert examination of the practical problems of providing adequate meat inspection services.

Major Lloyd George: Responsibility for the inspection of meat rests with local authorities. My Department will be prepared to discuss arrangements at the experimental slaughterhouses with the local authorities concerned, and the recommendations of the Inter-Departmental Committee on Meat Inspection will be borne in mind.

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Irish Cattle Imports (Warble Fly)

Mr. Odey asked the Minister of Agriculture whether, in view of the infestation of Irish cattle with the warble fly, he will issue regulations so that these cattle may be treated with anti-warble fly dressing at their port of entry into this country, thereby reducing the spread of the warble fly in this country.

Sir T. Dugdale: The Warble Fly (Dressing of Cattle) Order of 1948 provides that infested cattle that come into the ownership of any person at any time during the dressing season (March 15th to end of June) shall be dressed within seven days. I am not satisfied that I should be justified in requiring all Irish cattle to be dressed at the port of entry to this country, especially as a similar order to ours operates in Northern Ireland and cattle from Eire are dressed at the port of embarkation.

NOTES AND NEWS

Diary of Events

May 17th.—Annual General Meeting of the Society of Women Veterinary Surgeons, at the Zoological Gardens, Regent's Park, London, N.W.1, 2 p.m.

May 20th.—Annual General Meeting of the Agriculture Group of the Society of Chemical Industry, in the Chemistry Department, Royal College of Science, Imperial Institute Road, London, S.W.7, 2.45 p.m.

May 21st.—Meeting of the Scottish Branch, B.V.A., at Glasgow (North British Station Hotel, 2.30 p.m.

May 22nd.—Annual General Meeting of the Dumfries and Galloway Division, B.V.A., at Carlisle (Crown and Mitre Hotel), 12 noon.

May 22nd.—Annual General Meeting of The Society of Practising Veterinary Surgeons, at the Ho'born Restaurant, London, W.C.1, 2.30 p.m.

May 23rd.—Meeting of the Royal Counties Division, B.V.A., at Reading (Caversham Bridge Hotel), 2.30 p.m.

May 23rd.—Meeting of the Veterinary Division of the British Homoeopathic Association, at 43, Russell Square, London, W.C.1, 5 p.m.

May 23rd.—Meeting of the Biochemical Society, in the Physiology Institute, Newport Road, Cardiff.

May 23rd.—Annual General Meeting of the Sussex Division, B.V.A., at Brighton (Old Ship Hotel), 2.30 p.m.

May 24th.—R.V.C. Athletic Club Sports Day, Goring Recreation Ground, 2 p.m.

XUM

May 27th.—Annual General Meeting of the National Veterinary Benevolent and Mutual Defence Society, at Manchester (The Midland Hotel), 2.30 p.m.

June 4th.—109th Annual General Meeting of the Royal College of Veterinary Surgeons, at 10, Red Lion Square, London, W.C.1, 12 noon.

June 4th.—Annual General Meeting of the Victoria Veterinary Benevolent Fund, at 10, Red Lion Square, London, W.C.1,—immediately following the above.

June 4th.—Annual General Meeting of the Southern Counties Division, B.V.A., at Bournemouth (Grand Hotel), 6 p.m.

June 4th to 6th.—Meetings of Committees and Council, R.C.V.S., at 10, Red Lion Square, London, W.C.1.

June 11th.—Meeting of the R.A.V.C. Division of the B.V.A., at the R.A.V.C. Laboratory, Thornhill, Aldershot, 3 p.m.

June 12th.—Annual Meeting of the R.A.V.C. Golfing Society, at the North Hants G.C., Fleet.

Sept. 8th—13th.—Seventieth Annual General Meeting and Congress of the British Veterinary Association, at Harrogate.

R.C.V.S. Examinations

June 5th/6th.—D.V.S.M. Written Examinations at Edinburgh.
June 26th/27th.—R.C.V.S. Membership Written Examinations.

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R.C.V.S. Council Election

The Registrar, Royal College of Veterinary Surgeons, would remind members who have not yet voted that completed voting papers must reach him *on or before Monday, May 19th.*

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B.V.A. Congress at Harrogate

In this issue we publish the provisional programme of the 70th Annual Congress of the British Veterinary Association, to be held at Harrogate from September 8th to 13th, together with a list of recommended hotels, with terms, while the manifold attractions of this year's conference centre and its surrounding country are the subject of a special article.

We would draw the attention of members to the importance of making reservations direct with the hotel of choice. The Majestic will be the headquarters hotel of the Association and members booking there are requested to intimate that they are attending the Congress, inasmuch as a certain number of reservations have been made up to the beginning of September. At this hotel nurses for young children will be specially provided to facilitate the attendance of their parents at the evening functions.

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PERSONAL

Births.—Jenner.—On May 3rd, 1952, at 7, South Terrace, Penzance, Cornwall, to Eileen MacGregor (*née* Fraser), wife of F. H. Jenner, B.SC., M.R.C.V.S., a son—Paul Malcolm.

Steele.—On April 29th, 1952, at Stoke-on-Trent, to Patricia, wife of Colin Steele, B.V.SC., M.R.C.V.S., twins—a son and a daughter.

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Forthcoming Marriage.—Fleming—Long.—The engagement is announced between John Allan Fleming, M.R.C.V.S., M.S., younger son of the late Mr. G. K. Fleming and Mrs. Fleming, of Aberbothrie, A'yth, Perthshire, and Judith Ann, elder daughter of Mr. and Mrs. Ronald Long, of Aylets, Halstead, Essex.

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Marriages.—Barnett—Minson.—On April 26th, 1952, at St. Nicho'as, Worth, David N. Barnett, M.R.C.V.S., to Joyce Marjorie Minson, M.R.C.V.S. Ian A. Walker, M.R.C.V.S., was best man.

Simpson—Baillod.—On March 29th, 1952, in Berne, Switzerland, Best Simpson, M.R.C.V.S., D.V.S.M., to Nelly Hélène Baillod.

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Professor Jovan Dimic.—A welcome visitor to B.V.A. headquarters last week was Professor Jovan Dimic, Dean of the Veterinary Faculty of Belgrade University and Professor of Veterinary Surgery and Ophthalmology. He is visiting the United Kingdom for two months in order to meet British veterinarians, and a tour of veterinary and allied institutions is being arranged for him by the British Council.

Mr. and Mrs. Francis Pickering.—Their many friends in the profession will unite with us in congratulating Mr. and Mrs. Francis Pickering, of Orchard House, Priestpopple, Hexham, Northumberland, on the celebration of their golden wedding, on April 30th. Their youngest son, a Roman Catholic priest who is a professor at Ushaw College, was at the Hexham Church to say a special Mass to commemorate the anniversary.

Mr. Pickering, at 80 years of age, still practises actively and with enjoyment. Mr. and Mrs. Pickering's two other sons are both veterinary surgeons. One is a partner in the Hexham practice; the other is a Divisional Veterinary Officer with the Animal Health Division of the Ministry of Agriculture in Newcastle.

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President of the Royal Agricultural Society of Kenya.—At the annual general meeting of the Royal Agricultural Society of Kenya, held recently in Nairobi, Mr. R. A. Hammond, O.B.E., M.R.C.V.S., Director of Veterinary Services, Kenya, was elected President of the Society for 1952-53.

In forwarding the above information a colleague writes: "The election of a member of the profession to this high honorary position in the essentially agricultural territory of Kenya is both interesting and timely, drawing attention not only to personal merit but a'so to the high regard in which the Veterinary Department is held in the Colony." Mr. Hammond has been a member of the Council for three years.

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Veterinary Student War Air Ace Commands County Auxiliaries

In its issue of May 1st the *Liverpool Daily Post* records that Squadron-Leader James Eric Storrar, D.F.C. and Bar—31 years old and a Battle of Britain veteran—has been appointed to command the 610th County of Chester Squadron, Royal Auxiliary Air Force, which is based at Hooton.

Squadron-Leader Storrar was awarded the D.F.C. for his part in intensive fighting over Dunkirk in 1940, when he shot down two of 21 enemy aircraft destroyed by the Squadron to which he was attached and was awarded a bar three years later for his skill and determination as leader of 65 Squadron. He later became Wing Leader at Biggin Hill and Digby, Lincolnshire. After release from the R.A.F. in 1947 he went to Edinburgh University to train as a veterinary surgeon. He will complete his studies in June and will move to Christleton, Chester.

Married, with two sons, Squadron-Leader Storrar is the eldest son of Mr. and Mrs. James Storrar, of Claremount, Vicars Cross, Chester. He was born at Ormskirk and educated at Chester. He is at present a member of the 603 City of Edinburgh Squadron. His father is a veterinary surgeon.

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Anthrax:

Derbys.—Weston Farm, Weston-upon-Trent, Derby (May 8th).

Dumfriesshire.—Relief Farm, Ecclefechan, Lockerbie (May 5th).

Leics.—Roseleigh, Workhouse Lane, Coleorton, Leicester (May 5th).

Lincs (Kesteven).—Home Farm, Marston, Grantham (May 5th).

Somersetshire.—1, Sunny Patch, Chew Stoke, Bristol; Sandy Hill Farm, Tytherington, Frome; Hadspen Farm, Castle Carey, Bath (May 2nd); West Farm, Stoke-under-Ham; Tanyard Farm, Westholme, Pilton, Shepton Mallet; Venn Pitt Farm, East Harptree, Bristol; Waterside Farm, Radstock, Bath; Hippesley Farm, Chewton Mendip, Bath; Combe Hay Farm, Westbury-sub-Mendip, Wells (May 5th); Yew Tree Farm, Walton Street; Combe Hay Farm, Westbury-sub-Mendip, Wells (May 6th); Bagley Farm, Bagley, Wedmore (May 8th).

Suffolk (E.).—Porters Farm, Covehithe, Wrentham, Beccles (May 5th); Manor Farm, Hint'esham, Ipswich (May 8th).

Sussex (E.).—Cherry Tree Pig Farm, Balcombe, Haywards Heath (May 6th).

Warwicks.—Haye Farm, Mappleborough Green, Studley (May 2nd); Budbrook Piggeries, Budbrook Road, Warwick (May 6th).

Wilts.—Laurels Farm, Hawkeridge Road, Westbury (May 3rd).

Worcs.—Barrells Manor Farm, Knighton, Inkberrow (May 5th).

Yorks (W.R.).—Elmhurst Farm, Cawthorne, Barnsley (May 5th).

FOOT-AND-MOUTH DISEASE:

Argyllshire.—No. 5 Holding, The Square, Ardfenaig, Bunessan, Isle of Mull (May 10th).

Berks.—Petwick Farm, Challow Station, Farringdon (May 3rd); Stud Farm, Childrey, Wantage (May 5th); Hanney Bridge Field, Grove, Wantage (May 8th).

Bucks.—Bourton Mill Farm, Buckingham (May 6th); Sewage Work House, Bradfield Farm, Grove, Wantage (May 7th).

Caernarvonshire.—Brynddreninen, Padog, Bettws-y-Coed, Caerns (May 3rd); Bryn Tirion, Yspytty Ifran, Bettws-y-Coed (May 6th).

Cheshire.—Wood Farm, Woolstanwood, Crewe; Stoke Hall Farm, Nantwich (May 2nd); Spring Bank Farm, Gresty, Crewe (May 3rd); Lea Farm, Lea, Wybunbury; Brooklands Farm, Wettenhall, Winsford; Park Farm, Harleston, Nantwich; The Forge Mill Farm, Warmingham, Middlewich (May 4th); Woodside Farm, Wettenhall, Winsford; Eardswick Hall, Minshull Vernon, Crewe (May 5th); Yew Tree Farm, Hurleston, Nantwich (May 7th); Gale Farm, Calveley, Tarporley (May 8th); Holly Tree Farm, Broughton Road, Coppenhall, Crewe; Yew Tree Farm, Gresty, Crewe (May 10th).

Derbyshire.—Kings Clough, Rowarth, Stockport (May 5th); North Farm, Cubley, Derby (May 8th); The Carr Farm, Cubley, Derby (May 9th).

Fifeshire.—Annfield Farm, Leven (May 4th); Easter and Wester Kinvear, Wormit, Fife (May 7th).

Kent.—Blacketts Farm, Tonge, Sittingbourne (May 2nd); Ulley Farm, Kennington, Ashford (May 8th); Great Pincham Farm, Whitfield, Dover (May 9th).

Leics.—Barwell Corporation Slaughterhouse, Barwell (May 3rd); Hogue Hall, Burbage, Hinckley (May 6th).

Midlothian.—Rose Mains, Ford (May 4th).

Northants.—The Rectory Field, Barton Seagrave, Kettering; Olney Grounds, Willoughby, Rugby (May 2nd); The Fields, Wicksteed Park, Kettering (May 3rd); Buttett Farm, West Haddon, Rugby (May 5th); Spring Field, Billing Road East, Weston Favell (May 6th); Dales Lodge, Barton Seagrave, Kettering (May 7th).

Perthshire.—Laigh of Rossie, Dunning (May 2nd); The Leigh Field, Mains of Cultmalindie, Tibbermore, Perth (May 7th).

Salop.—Lightwood Farm, Cheswardine (May 2nd); Bella Port Lodge, Norton-in-Hales, Market Drayton (May 4th); Lower Farm, Ridgwardine, Market Drayton (May 7th); Manor Farm, Ridgwardine, Market Drayton (May 9th); Winnington Grange and Betton Coppice Farm, Market Drayton; Rooms Farm, Adderley, Market Drayton (May 11th).

Staffs.—Owls Clough, Oakamoor, Stoke-on-Trent (May 2nd); Bowhill Farm, Betley, Crewe; Lightwood Dairy Farm, Cheadle (May 3rd); Bank Farm, Rocester, Uttoxeter; Daisy Bank Farm, Tean, Stoke-on-Trent; Winnington Farm, Mucklestone, Market Drayton (May 4th); Grove Farm, Hooks Gate; Hungersheath Farm, Ashley, Market Drayton; Mount Field, Teanford Lane, Cheadle; Beamhurst Hall Farm, Uttoxeter (May 5th); Holloway Lane Farm, Baldwinsgale, Stoke-on-Trent (May 9th); Blakelow Farm, Hilderstone, Stone (May 10th); Standon Hall Farm, Standon, Stafford (May 11th).

Sussex (E.).—Pontmills Farm, Hellingly, Hailsham (May 8th); Springham Farm, Hellingly, Hailsham (May 12th).

Warwicks.—The Green, Napton Road, Stockton, Rugby (May 3rd); Home Farm, South Kilworth, Rugby (May 7th).

FOWL PEST:

Berks.—Amerden House, Taplow, Maidenhead (May 6th).

Lincs (Kesteven).—Waterham, North Hykeham (May 5th).

SWINE FEVER:

Aberdeenshire.—Margaret Cottage, Persley, Bucksburn (May 7th).

Berks.—Red Cottage, Bath Road, Calcot, Reading (May 7th).

Cornwall.—Trefenna Castle Hotel, St. Ives (May 9th).

Derby.—Common Farm, Milton (May 6th); 48, Princess Street, Castle Gresley, Burton-on-Trent (May 8th).

Glos.—Hawsley, Lydbrook (May 7th); Brierley Bank, Little Drybar, Lydbrook (May 9th).

Herefordshire.—Lilwall Farm, Kington; Holmer Grange Farm, Holmer (May 6th).

Herts.—Castle Hill Farm, Berkhamsted (May 5th).

Leics.—Hilltop Farm, Staunton-Harold (May 5th).

Norfolk.—Chase Allotments, King's Lynn (May 9th).

Oxon.—New Lees, Curbridge Road, Witney (May 10th).

Staffs.—The Batches, Eaves Lane, Bucknall, Stoke-on-Trent (May 6th); Old Hall Farm, Old Hall Lane, Barr Beaton, Walsall (May 8th); 15, Brindley Street, Burslem (May 10th).

Surrey.—Little Abbots, Wilmots Lane, Horne (May 5th); 2, London Road, Caterham (May 8th).

Worcs.—Manor Farm, Kersoe, Elmley Castle, Pershore; Arthur Street Piggeries, Redditch (May 7th).

Yorks (E.R.).—Derwent Cottage Farm, North Duffield, Howden (May 5th).

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THE INTERNATIONAL PHARMACOPOEIA

The W.H.O. Expert Committee on the International Pharmacopoeia, which has been holding its 10th session in Geneva, again elected Dr. C. H. Hampshire, C.M.G., as Chairman. Professor I. R. Fahmy, of Cairo, was elected Vice-Chairman, and Dr. H. Flück (Zürich) with Dr. Lloyd C. Miller (New York) were appointed rapporteurs. The remaining members of the Committee are: Dr. H. Baggesgaard Rasmussen (Copenhagen), Dr. T. Canbäck (Stockholm), Dr. R. Hazard (Paris) and Dr. D. van Os (Groningen).

In a note on the further proceedings of the Committee the *Pharmaceutical Journal* states that the session, which began on April 23rd and ended on April 30th, was devoted to the completion of monographs and appendices for Vol. II of the International Pharmacopoeia, which it is hoped to publish this year. The preface to Vol. I points out that it was found necessary or desirable to include in the second volume monographs on certain injections, tinctures and tablets, on the antibiotics, details of tests for sterility and pyrogens, and methods of biological assay. This volume will also contain a table of doses for children. It will be published simultaneously in English and French and a Spanish edition will appear later. An addendum to the complete work is scheduled for publication in 1953 and in 1955 there will be a new edition.

At the close of the session, members of the Committee met on the Sub-committee on Non-proprietary Names, which selects internationally approved non-proprietary names for drugs, to prevent the confusion which arises from the use in different countries of different names for the same drugs. So far, 600 international names for drugs have been selected and the Sub-committee is to consider 200 other new names.

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RED DEER SHOOTING IN SCOTLAND

Difficulties about the introduction of a close season for the shooting of red deer in Scotland will be examined and reported upon by a Committee to be set up by the Government. This was announced in the House of Lords by Lord Home, Minister of State, Scottish Office, during consideration of the Poaching of Deer (Scotland) Bill.

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OLYMPIC GAMES EQUESTRIAN EVENTS

The Committee of the British Horse Society announces that the three first choices for the Olympic Games three-day day event equestrian team will be Major L. Rook, Royal Horse Guards; Captain M. Naylor-Leyland, the Life Guards, and Mr. A. E. Hill. Captain of the team and a reserve choice will be Mr. J. R. Hindley. Major J. Miller, the Welsh Guards, and Lieut.-Commander J. Oram, R.N., will remain in training with the team at Porlock as reserve choices.

The final selection of the horses will not be made until a later date.

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The Ayrshire Herd Book Society has decided that the publication of an annual Herd Book should be discontinued. In its place will be instituted a system of Pedigree Registration Certificates. The new system, to take effect from January 1st next, involves a master file at breed headquarters and the issue of certificates giving pedigrees and milk records. Each member receives a copy of all his own entries, and can obtain others on request.

ROYAL SOCIETY OF EDINBURGH

Award of the Neill Prize to Dr. J. Russell Greig

At a meeting of the Royal Society of Edinburgh on Monday, May 5th, the President, Professor James Kendall, announced the award to Dr. Russell Greig of the Neill Prize for the period 1949-51 "in recognition of his valuable contributions to the knowledge of methods for the prevention and control of the diseases of domestic animals." Dr. Russell Greig, C.B.E., M.R.C.V.S., F.R.S.E., Director of the A.D.R.A. Institute at Moredun, is the more to be congratulated inasmuch as this is the first occasion, it is believed, upon which the Royal Society of Edinburgh has awarded the prize to a veterinarian.

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LEGAL NOTES

Alleged Misrepresentation in Sale of Bull

The sale of a pure-bred bull at the North-West of Ireland Show at Londonderry in March had a sequel at Omagh Quarter Sessions on May 6th when James Andrew Moffatt, a Co. Fermanagh farmer, of Tirwinney, Lack, sued James K. Irwin, Bomackatall, Drumquin, for misrepresentation in the sale and claimed £40 damages for breach of agreement.

The *Belfast Telegraph* reports that Moffatt gave evidence of purchasing the bull for 48 gns. plus expenses. When shown at Derry the animal was all black, but on the evening after the sale witness saw white appearing. This white had been covered over with some material like black boot polish, he alleged. About a week later all the black stuff came off and when witness complained to Irwin, the latter said he knew nothing about it, black or white. Witness had lost service fees as breeders did not like white on these bulls. As this was the last of the sales of the season, witness could not get another pure-bred bull.

For the defence, Mr. Robert Wauchob, veterinary surgeon, said he had seen patches of white as big on pure-bred bulls. Witness had tested this bull before it went to Derry Show and he did not see any white patch on it in the stall. When close to or standing above the animal the patch could not be seen.

Defendant denied the allegation about the blackening of the white patch on the bull and said he had not interfered with the bull nor did anyone on his behalf. The bull had the white patch when it was in the ring at Derry Show.

V. Irwin, son of the last witness, said no polish had been used on the bull. Most people, he said, polished the hooves of bulls.

His Honour said in his opinion the bull had been sold with this white blackened out. According to the experts the bull was really as good whether or not it had got a white spot. He awarded a decree for £10.

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R.C.V.S. Animal Management Examination, May, 1952

List of Successful Candidates

Edinburgh

Ashton, P. K.	Levack, Miss M. E. S. (C)
Baird, J. S.	Mackenzie, R. M.
Barnes, Miss P. C.	Maasri, K. J.
Barr, T. R. B.	Manktelow, D. B. S.
Borthwick, Ramsay (C)	Muirhead, R. H.
Cathcart, R. A.	Murphy, O. M. G.
Christie, R. F.	Parminter, Donald
Couttie, Peter	Paterson, R. C. G.
Dickson, James	Pill, A. H. (C)
Edwards, Miss E. M.	Podd, G. H. (C)
Ferguson, A. R.	Poole, Anthony
Findlay, C. R.	Raditapole, N. N.
Garden, Sigurd	Shires, R. M.
Gould, C. M.	Spence, J. B.
Haith, C. F. (C)	Steele, R. B. T.
Hovell, G. J. R.	Sutherland, I. H.
Howells, G. J.	Taylor, J. C.
Ingham, Brian	Teale, P. C.
Irving, Miss P. M.	Tennant, L. D.
Johnson, D. M.	Watt, I. M. (C)
Jones, D. F.	Weaver, A. D. (C)
Jones, J. S. L.	Williams, G. L. (C)
Kay, H. R. M.	Wittrick, D. A.

(C) denotes credit

(To be continued)

FOOT-AND-MOUTH DISEASE

The Ministry of Agriculture announced on Sunday that foot-and-mouth disease was confirmed at Bunessan, Isle of Mull, Argyllshire. The island and adjacent islands have been declared an infected area. On Tuesday two new outbreaks were announced: one was at Hellingly, East Sussex, and involved 26 cattle; the other was at Mackworth, near Derby, and involved 155 cattle, about 120 sheep and 10 pigs. Later, cases were confirmed at Wigtown, Scotland, and at Adderley, Market Drayton, Shropshire.

Since November 14th, 1951, the disease has been confirmed on 281 farms in England, Scotland and Wales and the numbers of livestock destroyed were 16,505 cattle, 10,920 sheep, 6,863 pigs and 20 goats.

With a view to preventing the further spread of the disease, the Ministry of Agriculture has issued a nation-wide appeal to visitors to the countryside to keep to footpaths.

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The March census returns of livestock on farms in England and Wales show a quarter of a million fewer cattle, only a small proportion being milch cattle, but a substantial increase in the numbers of sheep, pigs and poultry.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal opinions of the writer only and their publication does not imply endorsement by the B.V.A.

VETERINARY PRACTITIONERS

Sir,—While in full agreement with Mr. Waller's letter, surely it is time that those veterinary practitioners who are members of the B.V.A. held a get-together meeting to help themselves in most urgent matters relating to their calling.

In my area veterinary practitioners in private practice who are members of the B.V.A. appreciate the value of organisation but as yet do not enjoy fully the expected advantages and due consideration in the hour of need or sickness. Their position is one of complete isolation, without a friendly hand to help. Can we call a meeting, the most urgent matters being legal protection and the provision of locums during holiday or ill-health?—Yours faithfully, Ivor Hughes, 55, High Street, Saltley, Birmingham, 8. *May 9th*, 1952.

DISEASES OF ANIMALS ACT, 1950—GREAT BRITAIN

Summary of Returns of Confirmed Outbreaks of Scheduled (Notifiable) Diseases

Period	Anthrax	Foot-and-mouth	Fowl Pest	Parasitic Mange	Sheep Scab	Swine Fever
1st to 15th April, 1952	16	16	27	—	—	74
Corresponding period in—						
1951	22	—	12	—	—	38
1950	12	—	8	—	1	—
1949	7	2	17	—	—	—
1st Jan. to 15th April, 1952	135	72	92	—	1	349
Corresponding period in—						
1951	168	17	451	—	4	248
1950	138	12	60	—	19	1
1949	48	11	140	—	26	4

Tuberculosis Order of 1938

The number of bovine animals slaughtered under the Tuberculosis Order of 1938 during the period January 1st to March 31st, 1952, was 793.

BRITISH VETERINARY ASSOCIATION

HARROGATE CONGRESS, 1952

Provisional Programme

Sunday, September 7th

8-10.30 p.m. "At Home," given by the Yorkshire Division, B.V.A., at the Hotel Majestic.

Monday, September 8th

10.0 a.m. Civic Welcome by His Worship the Mayor of Harrogate (Councillor A. V. Milton, J.P.) at the Royal Hall.

10.30 a.m. Official Opening of the Exhibition of Surgical Instruments, Drugs, etc., by the President, B.V.A., in the Royal Hall.

2.30 p.m. *Address :* "Disease and Animal Husbandry as dealt with by the Food and Agriculture Organisation of the United Nations," by Dr. Kestevan, Chief of the Animal Production Branch, Food and Agriculture Organisation of the United Nations.

8.30 p.m. Civic Reception and Dance given by the Mayor and Mayoress of Harrogate at the Corporation Lounge Hall, Parliament Street.

Tuesday, September 9th

9.30 a.m. *Paper :* "Technical and Practical Application of Electro-therapy in the Equine," by Mr. Norman Gold, M.R.C.V.S., of Redditch. Opener : Dr. A. C. Fraser, B.V.Sc., M.R.C.V.S., of Lambourn.

2.15 p.m. *Paper :* "Electrocardiography in the Horse" (illustrated by lantern slides), by Mr. W. C. Miller, M.R.C.V.S., F.R.S.E., and Lieut.-Colonel J. Hickman, M.R.C.V.S., Animal Health Trust. Time will be allowed for questions.

Films of Operative Procedures, prepared by the Royal Veterinary College.

Ladies' Excursion. Details not yet fixed.

8.30 p.m. President's Reception and Dance at the Hotel Majestic.

Wednesday, September 10th

9.30 a.m. *Paper :* "Feline Enteritis," by Dr. A. W. Gledhill, B.A., M.R.C.V.S., National Institute for Medical Research, Mill Hill. Opener : Miss W. M. Brancker, M.R.C.V.S., of Sutton Coldfield.

12 noon Last meeting of 1951-52 Council, in Royal Hall.

2.30 p.m. Congress Photograph in Royal Hall Gardens.

3.0 p.m. Annual General Meeting in Royal Hall.

7.30 p.m. Annual Banquet at the Hotel Majestic.

Thursday, September 11th

9.30 a.m. *Paper :* "Q Fever (A Rickettsial Disease of Humans carried by Animals)," by Dr. G. Slavin, M.R.C.V.S., Senior Research Officer, Ministry of Agriculture and Fisheries, Weybridge. Opener : (to be arranged).

Paper : "*Vibrio foetus* Infection in Cattle," by Mr. J. R. Lawson, M.R.C.V.S., Senior Research Officer, Ministry of Agriculture and Fisheries, Weybridge. Opener : Mr. G. Seaton Powley, M.R.C.V.S., of Wetherby.

AFTERNOON : Free for golf, tennis, bowls, etc.

Congress Excursion. Details not yet fixed.

8.30 p.m. Ladies' Guild Dance.

Friday, September 12th

9.30 a.m. *Paper :* "Modern Methods for the Control of Ectoparasites of Livestock," by Mr. W. Downing, F.R.C.V.S., Mr. H. E. Harbour, B.A., M.R.C.V.S., and Mr. L. C. Stones, B.A., M.R.C.V.S., Cooper Technical Bureau. Opener : Mr. I. W. Montgomery, I.C.I. of Australia and New Zealand.

2.30 p.m. Repeat showing of Cine-films, in colour, of various major operations on small animals carried out at the Royal Veterinary College and Hospital, London (and as presented by Mr. G. C. Knight, F.R.C.V.S., at the Eastbourne Congress).

2.30 p.m. Sectional Meeting : A meeting of the Association of Veterinary Teachers and Research Workers.

EVENING : Theatre Party. Details not yet fixed.

Saturday, September 13th

10.0 a.m. Closing meeting of the Congress, followed by First Meeting of 1952-53 Council, in the Royal Hall.

Throughout the Congress there will be an Exhibit of Specimens by the Veterinary Laboratory, Ministry of Agriculture, in the Royal Hall.

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BRITISH VETERINARY ASSOCIATION CONGRESS, 1952

September 8th to 13th

RECOMMENDED HOTELS AT HARROGATE

The following is a list of recommended hotels at Harrogate, giving particulars of accommodation, charges, etc. Members are advised to make reservations *as soon as possible* direct to the hotel of choice. The Majestic is the headquarters hotel for the period of the Congress.

If any member requires information regarding guest or apartment house accommodation in Harrogate, this can be obtained direct from the Conference Secretary, Harrogate Corporation, Royal Hall, Harrogate.

Name	Address	Telephone number	Garage	Total number of guests	Full board (three days or more) per day	Full board (less than three days)	Bed and breakfast (three days or more)	Bed and breakfast (less than three days)
Beechwood Court	Cold Bath Road	—	Yes	150	18/– to 22/–	—	12/6	—
Berkeley	35, Victoria Avenue	430811	Nearby ; large yard	25	21/– to 25/–	—	15/–	—
Boston	Swann Road	2918	Open yard	30	18/6	20/–	13/6	15/–
Britannia Lodge ...	Swann Road	4206	Nearby	16	21/–	—	12/6	—
Brompton House...	94, King's Road	6128	Open yard	16	18/– to 21/–	—	13/6	—
Cairn Hydro Hotel	Ripon Road	4005	Yes	240	27/6 to 35/–	—	21/–	—
Cecil	Valley Drive	2148	No	80	25/–	—	15/–	—
Claremont... ...	Victoria Avenue	233311	No	80	24/–	—	—	—
Clarendon ...	27, West Park	447811	Yes	25	25/–	—	17/6	—
Dirlton	23, Ripon Road	6662	No	80	17/– to 20/–	—	12/6	—
Eversfield	1, Swann Road	204511	Yes	14	27/6	27/6	15/–	—
Fernlea	Swann Road	5952	No	16	21/–	—	12/6	—
Granby	Granby Road	3046–8	Yes	100	30/– to 35/–	—	21/– to 25/–	—
Grand	Cornwall Road	4631	Yes	300	35/– to 47/6	—	25/– to 32/6	—
Grange	West Stray	2656	Adjoining	100	21/– to 25/6	—	12/6 to 14/6	—
Green Park ...	Valley Drive	4681	Nearby	80	25/–	—	15/– to 17/6	—
Kensington ...	Valley Drive	2787	No	50	21/– to 25/–	—	15/–	—
Kirksyde	St. Mary's Walk	4472	No	60–70	21/– to 24/–	—	14/6 to 16/6	—
Knowle	Coppice Drive	2539	Yes	20	21/– to 25/–	—	15/–	—
Langham	Valley Drive	234711	No	80	25/–	—	15/–	—
Majestic	Ripon Road	2261	Yes	300	49/–	—	27/6	—
Metropole ...	Valley Drive	593211	No	32	22/6	25/–	15/–	—
Mount Edgecumbe	103–105, Valley Drive	237211	Open yard	30	21/–	—	15/–	—
North Eastern ...	Station Square	4657	No	40	25/–	—	16/–	—
Octagon	Valley Drive	2611	No	36	22/6	—	15/–	—
The Old Swan ...	Swann Road	4051	Yes	300	25/– to 35/–	—	21/– to 25/–	—
Prince of Wales ...	West Park	6675	Yes	210	30/– to 42/–	—	21/– to 30/6	—
Prospect	Prospect Place	5071	Adjoining	150	27/6 to 38/–	—	20/– to 27/6	—
Ridings	Springfield Avenue	2602	No	25	21/–	—	—	—
Riversdale ...	17–19, Valley Drive	6193	No	32	21/–	—	14/6	—
Russell	Valley Drive	3134	Nearby	80	25/– to 30/–	—	16/6 to 17/6	—
Somerset	Parliament Street	450111	Yes	17	25/–	—	16/6	—
Studley	Swann Road	6007–9	No	28	30/–	—	—	—
Valley Gardens ...	Valley Drive	3675	No	70	25/–	—	15/–	—
West Park ...	West Park	231011	Yes	25	25/–	—	15/–	—